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THE BACTERIOLOGY AND EXPERIMENTAL PRODUCTION OF OVARITIS *

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The bacteriology of acute infections of the ovary has been studied extensively. The possible bacterial cause, on the other hand, of the chronic inflammations in the ovary, associated with sclerosis and cystic degeneration, still lacks demonstration. A comprehensive bacteriologic study of the involved tissues in this condition, in which due regard has been paid to the question of oxygen pressure, as emphasized by one of us,[1] has not been made. That some infections of the ovary may be of hematogenous origin from a distant focal source, and not direct extension from the genital tract, is supported by many recent clinical observations, and the demonstrated fact that bacteria from foci of infection and the involved tissues in other diseases, such as appendicitis, ulcer of the stomach, cholecystitis, erythema nodosum and herpes zoster tend to infect electively the corresponding organs in animals, when injected intravenously.[2] As far as we know, however, no one has heretofore proved experimentally that streptococci causing inflammation of ovaries in the human species show elective affinity for these structures in animals.

Fig. 1. — Ascites-dextrose-broth culture of streptococcus (Case 373) from human cystic ovary. Note the long chains. Gram-Weigert, × 1,200.

In this paper, we wish to record briefly the results of cultures made from tissues and the cystic fluid in a series of ovaries removed at operation, to cite the history of a few illustrative cases, and to give the results of animal experiments made with some of the strains isolated.

Most of the ovaries studied showed on microscopic examination the typical chronic fibrocystic degeneration, and were removed[3] for the usual menstrual and certain nervous disturbances believed to be due to ovarian malfunction. Only a small proportion of the cases studied gave a history of a previous acute pelvic infection, and in only three cases was there present a relatively acute process. In a number the history indicated clearly that the pelvic disturbance began after the contraction of a severe cold during the menstrual period or following definite attacks of tonsillitis. It is to be regretted, however, that we did not give more attention to the presence or absence of demonstrable foci of infection at the time of the surgical treatment.

The ages of the patients ranged from 18 to 55 years, twenty-six being under 30 years of age. Altogether cultures have been made in sixty-four cases. In fifty-six, the records of the associated abdominal findings as determined by laparotomy were quite complete — fibroids of the uterus were found in eighteen, salpingitis in eleven, chronic appendicitis in eleven, and chronic cholecystitis in eight.

The technic of making the cultures was that used by one of us in connection with a similar study in other diseases.[2] Suffice to say here that shake cultures were made in tall columns of ascites-dextrose agar from one or more portions of the ovary, at least 1 cm. in diameter, previously emulsified in a specially devised sterile air chamber.

RESULTS OF THE CULTURES

Two of three patients with acute tubo-ovarian abscesses showed pure cultures of *Streptococcus viridans* in countless numbers in the involved tissues. The pus of one of these was sterile, while the other showed a moderate number of the same streptococcus. The third acute case yielded the gonococcus in large numbers. In ten cases, the cultures remained permanently sterile. In the remaining fifty-one cases, in which the ovaries showed the usual fibrocystic degeneration,

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1. Rosenow, E. C.: The Newer Bacteriology of Various Infections as Determined by Special Methods, THE JOURNAL A. M. A., Sept. 12, 1914, p. 903.

2. Rosenow, E. C.: Elective Localization of Streptococci, THE JOURNAL A. M. A., Nov. 13, 1915, p. 1687.

3. We wish here to express our thanks to those who cooperated with us, especially Dr. J. Clarence Webster and his associates at the Presbyterian Hospital, Chicago.

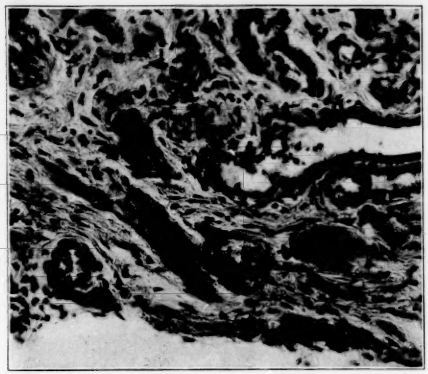

Fig. 2.—Section of cystic ovary in the young girl with imperforate vagina, showing distinct round cell infiltration and aggregations of leukocytes in what appears to be a newly formed blood vessel. Hematoxylin and eosin, × 220.

streptococci were isolated in twenty-nine, the number of colonies ranging from one, or relatively few, usually in the depths of the ascites-dextrose agar, to hundreds, and in a few instances, countless numbers. They were present in pure culture in seven, and associated in the others with the Welch bacillus and a few staphylococci or colon bacilli. Welch bacilli were found in small numbers in twenty-one, diphtheroidlike bacilli in ten, a few colonies of *Staphylococcus albus* in nine, the gonococcus in two, the colon bacillus in three, and an aerobic streptothrix in one.

The cultures of the ovaries from the eighteen patients who had fibromyoma of the uterus were positive fifteen times, the *Streptococcus viridans* was isolated in eleven instances, and the Welch bacillus in eight. The eleven cases with salpingitis gave positive cultures from the ovary nine times, the *Streptococcus viridans* in eight, the Welch bacillus in three, and the gonococcus in two. The ovaries from the eleven patients with chronic appendicitis showed the streptococcus eight, and the Welch bacillus two times. Eight patients had chronic cholecystitis, and the ovaries from these showed the streptococcus in six. The tubes were cultured in five cases, and when positive showed organisms with similar cultural characteristics to those obtained from the patient's ovary.

In many instances, cultures were made from both the cyst fluid and the tissue. The cyst fluid was sterile in all but three instances, all three showing streptococci. The cultures from the corresponding tissues in all of these showed streptococci. Thus, in one patient, aged 23 years, showing typical cystic ovaries, there developed 450 colonies of streptococci from the tissue, and 130 colonies from the cystic fluid.

The primary cultures of the streptococcus frequently showed marked involution forms, there being present very large club-shaped organisms and often large and small coccus forms. This was often so marked, even in smears from individual colonies, that it was difficult to decide whether we were dealing with diphtheroid bacilli, a mixture of diphtheroid bacilli and micrococci, or streptococci with marked involution forms, resembling in this respect the strains obtained in erythema nodosum (Rosenow[4]). Cultivation aerobically in liquid mediums (ascites broth and litmus milk) was frequently necessary before a decision could be made. If the organisms found were diphtheroid bacilli, no growth took place. If they were streptococci, characteristic morphology, chains and fermentative properties appeared (Fig. 1). The streptococci in the primary cultures often were gram negative, especially in ascites-dextrose agar and broth. In all instances they produced small, dry, discrete, often distinctly adherent, colonies on blood agar plates surrounded by a distinct green zone. The older cultures often showed a narrow zone of hemolysis surrounding the green zone. In no instance was there found a typical hemolytic streptococcus. None of the strains fermented inulin, and none showed a capsule. A number of strains resisted autolysis in salt solution under ether, and were insoluble in bile. The staphylococcus and true diphtheroid bacilli, it would appear, are to be regarded either as accidental or harmless invaders—injections of each do not produce lesions in animals. The finding of the colon bacillus in only one case is good evidence that the intestinal wall is quite impermeable to bacteria. The significance of the Welch bacillus is not known. It probably plays no determining rôle in the etiology of this condition, and appears to exist in the tissue in the spore form. It never grows except when oxygen is absent in the depths of those tubes containing a large amount of partially emulsified tissue. Intravenous injections into animals of five of the

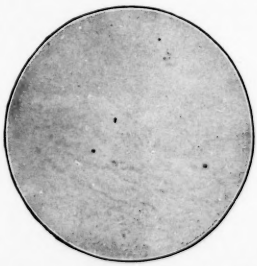

Fig. 3.—Diplococci in the interstitial tissue of the ovary shown in Figure 2. The two objects, which appear as cocci, are diplococci in partial focus. Gram-Weigert, × 1,000.

4. Rosenow, E. C.: The Etiology and Experimental Production of Erythema Nodosum, Jour. Infect. Dis., 1915, xvi, 367.

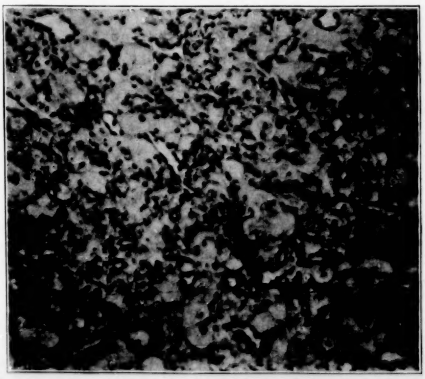

Fig. 4.—Section of the corpus luteum of the rabbit (R 177) seventy-two hours after intravenous injection of streptococci from the human cystic ovary (Case 2). Note the hemorrhage and the marked leukocytic infiltration. Hematoxylin and eosin, × 200.

Fig. 5.—A section through the placental site in the rabbit (R 177) seventy-two hours after intravenous injection of streptococcus from human cystic ovary (Case 2). Note the marked hemorrhage, leukocytic infiltration and necrosis. Hematoxylin and eosin, × 60.

strains of streptococci showed that they were of a low grade of virulence, rabbits and dogs recovering promptly. Two of these strains, however, as shown below, showed elective affinity for the ovary in rabbits and dogs.

MICROSCOPIC ANATOMY OF THE HUMAN OVARIES

The microscopic changes were the usual kind, and do not call for detailed description. A study of sections in twenty-three cases, in which cultures were made, showed very similar findings in all. Normal graafian follicles were not found. In a number, there were remnants of follicles, which were largely replaced by connective tissue and surrounded by round cell infiltration. The stroma in all showed marked fibrosis and frequently small islets of the interstitial cells. The blood vessel walls were thickened. The walls of the small cysts were infiltrated with numerous round cells, while the larger ones were made up of old connective tissue. Nests of round cell infiltration were found in many, chiefly surrounding the blood vessels, and in the walls of the graafian follicles, and in a number aggregations of leukocytes within and around small blood vessels (Fig. 2). The latter was true especially in those in which the portion cultured showed a relatively large number of streptococci. In some there was found extravasated blood, but this appeared to be traumatic. No sections were made of the three ovaries showing acute inflammation.

The demonstration of bacteria in the tissues was difficult, because present in relatively small numbers in all, and impossible in those showing no bacteria in cultures. In eight, however, in which the cultures showed a large number of streptococci and, on microscopic examination, a correspondingly greater tissue reaction, Gram-Weigert stains showed diplococci (Fig. 3). These were found usually within leukocytes or in areas of infiltration, and in one instance (Case 960) within the lumen of a blood vessel showing normal aggregation of leukocytes.

Fig. 6.—A chain of two disintegrating diplococci in the area shown in Figure 4. Gram-Weigert, × 1,000.

The findings in the two following cases are of special interest, and throw light on the source of the streptococcus and the mechanism of the occurrence of ovaritis:

CASE 1 (960).—A girl, aged 18 years, in the Presbyterian Hospital, had complained during the past year of a dull heavy aching pain in the right inguinal region, which recurred each month, lasted three days and then disappeared. She had never menstruated, and except for the delayed appearance of puberty and the foregoing symptoms, she had been quite well. Dr. Webster found an imperforate vagina, 1 inch long, the cervix not connected with the vagina, and connected with the corpus uteri only by a fibrous band, adherent omentum, retroverted uterus, fibrous degeneration of tubes with closure of the right, fibrous and cystic degeneration of the ovaries, especially the left, and adhesions about the rectum and appendix. He did a modified panhysterectomy. The left ovary and tube were obtained for study. Microscopic examination of sections of the ovary showed marked fibrosis, thickening of the blood vessel walls and cystic degeneration. There were numerous nests of perivascular, round cell infiltration, and in some areas aggregations of leukocytes within blood or lymphatic vessels, and in the vasa vasorum of a much thickened blood vessel wall. Diplococci were found in the portion of the ovary showing aggregations of leukocytes within blood vessels, and in areas showing round cell infiltration (Fig. 3). All cultures from the tube remained sterile, while those from the ovary showed twelve colonies of the usual streptococcus. A subculture from one of these colonies in ascites-dextrose-tissue broth was injected into a female dog, which remained apparently well. Three weeks later it was chloroformed, and there were found a number of encapsulated, yellowish, nodular areas beneath the capsule of the ovary, which were filled with chocolate-colored fluid, rich in fat, leukocytes and mononuclear cells. The cultures remained sterile. There were no other lesions.

CASE 2 (373).—A single woman, aged 30, entered the Presbyterian Hospital on

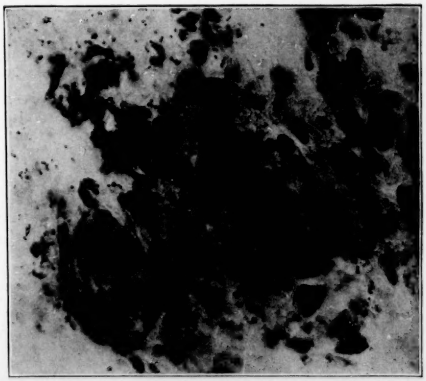

Fig. 7.—Section of the infiltrated area shown in Figure 5. Note the enormous numbers of diplococci and leukocytes. Gram-Weigert, × 1,000.

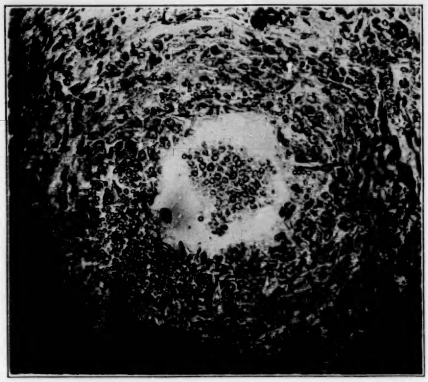

Fig. 8.—Section of the ovary of rabbit (R 219) seventy-two hours after intravenous injection of streptococci from cystic ovary. Note the marked hemorrhage in the wall of the graafian follicles. Hematoxylin and eosin, × 220.

the service of Dr. Billings, July 20, 1914, complaining of multiple enlarged, swollen, tender, painful joints and muscles, particularly of the jaw, elbows, hands and feet, with marked limitation of motion and fixation. The arthritis began three years before, some weeks after a severe attack of tonsillitis. There had been recurring exacerbations and remissions of the symptoms, but on the whole they had steadily progressed. She had lost 30 pounds in weight during the past year and a half, and in the past year had developed a severe dysmenorrhea, consisting of cramps and nausea lasting throughout the period, and often for eight or ten days following. Except for a chronic rhinitis, the patient had been in good health until three years before, following the attack of tonsillitis with abscess of the tonsil. The tonsils were removed nine weeks after the arthritis began, and she improved greatly. She had measles and whooping cough in childhood, and frequent attacks of tonsillitis during the nine years previous to the removal of the tonsils. During the past year, she was curetted twice for the dysmenorrhea without relief. The patient had a good appetite, slept well, the bowels were free and regular, there were no urinary disturbances, no leukorrhea at the time of examination, no cough, dyspnea, no night sweats, no edema of the feet, no cardiac or gastric disturbance, no jaundice, no diarrhea, and no chills or fever. The examination was negative except for the condition of the joints, a small remnant of the left tonsil and some bad teeth. Roentgenoscopy of the hands showed that there was a complete ankylosis of some fingers, and marked destruction of the cartilages in the balance of the joints. The remnant of tonsil was removed, and the condition of her teeth rectified. The patient left the hospital to return again in January, 1915. The symptoms of arthritis in general had definitely improved, but she complained of excessive menstrual flow, for which she was again curretted by Dr. Webster, but since this gave no relief, Dr. Webster, March 23, 1915, removed the left ovary, ligated the uterine artery, and removed the appendix and a small fibroid from the back of the uterus. Cultures of the ovary were made by Dr. Raulston, and a pure culture of the usual *Streptococcus viridans* obtained. The subculture in ascites-dextrose broth (Fig. 1) was injected into three female dogs and four female rabbits in doses ranging from 4 to 95 c.c. of the broth culture suspended in salt solution. All but one rabbit recovered. The animals were chloroformed on the second and third days after injection. All of the seven animals injected showed lesions of one or both ovaries. Five showed, in addition, distinct arthritis; one, myositis; one, cholecystitis, and two, hemorrhages and edema of the thymus. Three showed lesions in the uterus, and one hemorrhage in the fallopian tubes. Filtrates of this broth culture, on the other hand, injected into two rabbits in equivalent and repeated doses failed entirely to produce lesions in the ovary or otherwise.

Following the operation in March, when the one ovary and one tube were removed, the patient's general symptoms were much better, but the menorrhagia soon returned. She was again operated on, Oct. 5, 1915, and the uterus and remaining ovary removed. Cultures of the ovary were made by Drs. Gaarde and Coleman. A pure culture of the same organism was obtained, and this, when injected into rabbits, produced arthritis. Unfortunately, no examination was made for lesions in the ovary in these animals.

The following protocol will illustrate the results obtained in the animals:

Rabbit 177. Medium size, gray, female, injected intravenously, March 26, with the streptococcus from 60 c.c. of ascites-dextrose broth. March 27, seemed quite well and free from symptoms relative to the joints. March 28, chloroformed. Hemorrhages and localized areas of infiltration of the ovaries, especially the right. In the uterus were found five fetuses, measuring approximately 2 cm. in length. There was marked hemorrhage and infiltration at the point of placental attachment, and two of the placentas had partially separated. There were a number of small hemorrhages of the endometrium and subperitoneum remote from the placental site. The tubes showed no lesions. The fluid from both knees and ankle joints showed slight turbidity. No other gross lesions could be found. March 29, blood-agar cultures from the blood (0.5 c.c.) were sterile. The joint fluid and material obtained with a pipet from the hemorrhagic areas in the ovary showed a few colonies of a green-producing streptococcus, while cultures from the hemorrhagic areas at the placental site showed large numbers of the same streptococcus in pure form. December 3, sections of the ovaries showed marked hyperemia of the

Fig. 9.—Diplococcus in the hemorrhagic area shown in Figure 7. Gram-Weigert, × 1,000.

Fig. 10.—Chain of two diplococci in the interstitial tissue of the ovary of dog (D 303), showing moderate leukocytic infiltration, seventy-two hours after intravenous injection of streptococcus found in cystic ovary. Gram-Weigert, × 1,000.

vessels, and hemorrhage and leukocytic infiltration; the latter was especially marked in the portion of the ovary showing the characteristic interstitial cells and surrounding graafian follicles and what appeared to be a mature corpus luteum (Fig. 4). In the hemorrhagic and infiltrated areas were found unmistakable gram-positive diplococci. These in many instances appeared to be undergoing lysis (Fig. 6). Sections of the portion of the endometrium, with no gross changes, showed slight hyperemia of the vessels and no bacteria, while those of the hemorrhagic areas at the points of insertion of the placenta showed marked hemorrhage, marked leukocytic infiltration (Fig. 5), ulceration and many streptococci (Fig. 7).

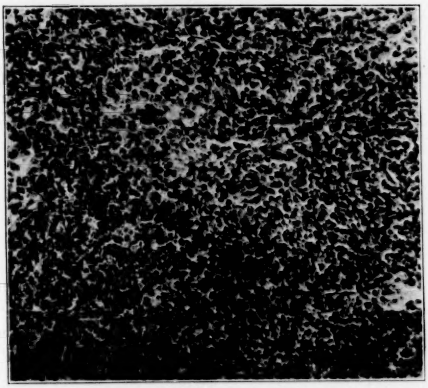

Fig. 11.—Section of the thymus in dog (D 305), showing marked hemorrhage and leukocytic infiltration. Hematoxylin and eosin, × 200.

The lesions in the ovaries of the rest of the animals were roughly in proportion to the size of the dose, and consisted of hemorrhages easily visible to the naked eye and microscopically perivascular and interstitial hemorrhages and leukocytic infiltration, chiefly under the capsule and in the walls of the graafian follicles (Fig. 8). Diplococci were demonstrated in small numbers in all (Figs. 9 and 10). In several there was found partial thrombosis of blood vessels. In one of these vessels two diplococci were demonstrated in leukocytes. The animals killed forty-eight hours after injection showed less leukocytic infiltration than those killed seventy-two hours after injection. Blood cultures from all but one were sterile. Cultures from the ovary showed a relatively small number of streptococci in four, while three were negative. The lesions in the thymus occurred oftener (40 per cent.), were more numerous and more marked than is usual following injection of streptococci (Fig. 11), and as in the ovaries, due to lodgment of streptococci but not to marked multiplication (Fig. 12).

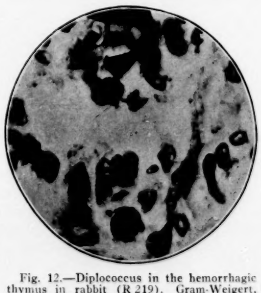

Fig. 12.—Diplococcus in the hemorrhagic thymus in rabbit (R 219). Gram-Weigert, × 1,000.

The lesions in the ovaries in the animals injected with the streptococcus were a striking picture. The demonstration of the streptococcus in the lesions, the isolation of the injected streptococcus in pure form, the absence of lesions following the injection of the broth culture filtrate, and the fact that we have not seen lesions in this magnitude in numerous animals injected with streptococci from other sources before and since, makes it certain that the result is not accidental, but due to peculiar properties of the injected streptococcus. It should be stated, however, that the number of streptococci in the ovary, even in these acute and marked experimentally produced lesions, was always small.

SUMMARY AND COMMENT

The following facts support the view that the streptococci isolated by us from the chronic lesions when there was no history of a previous acute infection, as well as those causing acute infections of the ovary, are carried to these structures by the blood more often than is generally believed:

1. The occurrence of fibrocystic degeneration of the ovaries in which the usual streptococcus was isolated in pure form in the young woman with imperforate vagina.

2. The history of tonsillitis followed by symptoms of pelvic infection in a number of patients in our series.

3. The not uncommon occurrence of pelvic infection noted in gynecologic practice following anginal attacks during the menstrual period.

4. The far more frequent occurrence of so-called idiopathic streptococcal peritonitis following anginal attacks, in the female than the male, which, according to Wilder,[5] who reviews the literature, and reports a case in point, is due to the occurrence of a primary hematogenous ovaritis and a secondary peritonitis.

5. The absence of colon bacilli in all but three ovaries in our series, a fact contrary to expectations if local invasion occurred commonly.

6. The frequent concurrence of appendicitis, cholecystitis and arthritis in these patients, diseases proved to be due usually to streptococci from a distant focus of infection.

The occurrence of fibrous and cystic degeneration in the ovary secondary to acute infection is already well established.[6] But, as pointed out, the cause of this condition without an acute infection has not previously been worked out. In our work we have isolated streptococci, often in pure culture, and demonstrated them in the tissues in the areas showing infiltration, roughly in proportion to the amount of tissue reaction in a large proportion of the ovaries studied. Two of the strains isolated showed a marked affinity for the ovary in two species of animals (rabbit and dog) producing hemorrhage and leukocytic infiltration (precursors of sclerotic changes) in and surrounding the graafian follicles and in the ovarian tissue stroma containing interstitial cells in the fully developed corpus luteum in a pregnant rabbit.

Hence, the conclusion seems warranted that fibrocystic degeneration of the ovary even in the absence of previous acute infection is due commonly to a low grade hematogenous infection by streptococci having elective affinity for these structures. Owing to the fact,

5. Wilder, R. M.: Peritonitis Following Acute Ovaritis of Anginal Origin, THE JOURNAL A. M. A., Feb. 19, 1916, p. 569.
6. Tait, L.: Diseases of the Ovaries, New York, William Wood & Co., 1883, pp. 97-110.

however, that the number of bacteria found is relatively small and that the experimental lesions in the ovary are not due to an overwhelming growth, it is clear that while excision and resection of ovaries is indicated in some instances, it should no longer be done without due regard to the existence of chronic foci of infection which may serve not only as the place of entrance but also as the place for the bacteria to acquire the peculiar properties necessary to infect the ovary. There is little indication for the removal of this type of ovary with the idea that it may play the rôle of a secondary focus of infection, yet Case 2 indicates that this at times is possible. The results suggest, however, that the eradication of primary foci of infection early in this type of patient might in some cases prevent the premature sclerotic degeneration of the ovary.

THE ETIOLOGY OF COMMON COLDS

THE PROBABLE RÔLE OF A FILTERABLE VIRUS AS THE CAUSATIVE FACTOR: A PRELIMINARY NOTE *

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Our knowledge of the causative factors concerned in the extremely prevalent catarrhal affections of the upper respiratory tract, popularly known as "common colds," is in an exceedingly chaotic state. The epidemiologic evidence seems to indicate clearly that these conditions are infectious; and this has led numerous investigators to attempt to isolate a causative organism. An etiologic relation to these infections has been ascribed to *Bacillus influenzae, Streptococcus hemolyticus, Streptococcus viridans,* the pneumococcus, *Micrococcus catarrhalis,* Tunnicliff's *B. rhinitis* and many other organisms.

Some time ago, Kruse[1] pointed out that, while common colds are undoubtedly infectious, the paucity of bacteria in the secretions and the short time that these few persist militates against the presumptive evidence that they are concerned in the infection.

In attempting to trace the causative factor by means other than the bacteriologic methods that had been resorted to previously, Kruse succeeded in producing colds experimentally with a filtrate obtained from the nasal secretion of an assistant who was ill with coryza. The secretion blown from the nose was diluted fifteen times with normal salt solution and passed through a small Berkefeld filter. A few drops of the filtrate dropped on the nasal mucosa of each of twelve men produced acute colds in four, or 33 per cent., of the twelve. The incubation period varied from one to four days. Repetition of this experiment on a more elaborate scale gave confirmation to his earlier results. In the second experiment the nasal secretion was diluted twenty times and, of the thirty-six students who volunteered for inoculation, 42 per cent. became ill with the usual symptoms of coryza within from one to four days. Kruse states that he was unable to demonstrate living organisms in his filtrates by bacteriologic methods, and concludes that the causative organism should be classified with the filterable viruses.

During the past winter I succeeded in confirming Kruse's observations; and the results of additional investigations indicate that, from the nasal secretions of persons who exhibited the characteristic symptoms of acute coryza, there has been cultivated, in vitro, a living virus. A definite conclusion as to the nature of this virus at this time would be based on questionable premises; but the experimental methods resorted to differ so radically from those previously used, and the results have been so suggestive, that it is deemed proper to publish a brief preliminary report of my observations in order that those interested may carry out investigations along similar lines.

MATERIAL

The first nasal secretion studied was obtained from one of the laboratory staff who had been ill with an acute coryza for two days. He complained of lassitude, chilly sensations, sneezing, unilateral nasal stuffiness, dull frontal headache with a feeling of oppression over the eyes, impairment of smell, and moderate aching pain in the extremities. There was the usual picture of an acute cold — injected conjunctivae, considerable lacrimation, a copious, thin, mucoid nasal discharge which excoriated the upper lip and the alae of the nose, and a very red, moist, swollen and boggy mucosa. The temperature was normal.

A second nasal secretion was collected on the first day of an acute cold experienced by myself. This attack was manifested by symptoms almost identical with those of the first case.

The third specimen was obtained from an employee of one of the large department stores who had been ill for three days. She complained of malaise, feverishness, aching pain in the back, nasal stuffiness, sneezing, frontal headache, dull pain over the eyes, impairment of taste and smell, slight soreness of the throat and moderate cough with expectoration. The nasal mucosa was moist, red, swollen and boggy. The nasal secretion was scant and mucoid and showed admixture of shreds of purulent material. The nasal alae were markedly excoriated and the eyelids were red and puffy. This patient felt certain that she had had considerable fever the preceding evening, but the temperature was normal at the time the nasal secretion was collected.

THE PREPARATION OF FILTRATES

In each case the nasal secretion was blown from the nose into a sterile Petri dish, mixed with 10 c.c. of sterile 0.8 per cent. salt solution, and carried to the laboratory in a sterile test tube. The material was then poured into a sterile shaking bottle containing smooth, round glass beads and agitated for ten minutes in a shaking machine. A thoroughly homogeneous opalescent mixture, free from clumps or strings of mucus, resulted. This mixture was then passed through a small Berkefeld N filter. The filters used in this work were new and proved impermeable to ordinary bacteria. Filtration was accelerated by suction from a Chapman water pump attached to the laboratory tap. The resulting rate of filtration was such that about 5 c.c. of brilliantly clear filtrate was collected in fifteen minutes. Human blood-agar plates prepared from the filtrates and incubated at 37 C. (98.6 F.), under both aerobic and anaerobic conditions, remained sterile at the end of seven days.

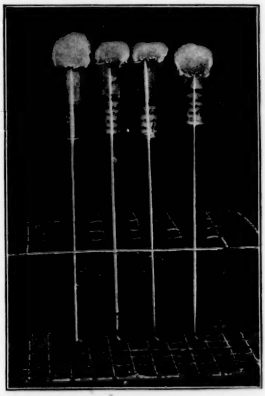
* From the Laboratory of Preventive Medicine and Hygiene of the Harvard Medical School.

1. Kruse, W.: Die Erreger von Husten und Schnupfen, München. med. Wchnschr., 1914, lxi, 1547.

INOCULATION TESTS WITH NASAL SECRETION FILTRATES

Ten soldiers at Fort Banks, Mass., who volunteered for the experiment, were inoculated with the filtrates described above. The men were in good health at the time. Seven of them stated that they were not prone to colds and had not been ill during the winter, while the remaining three men stated that they "caught cold" easily. In each case the nose was mechanically cleansed with water, but no predisposing factors to infection, such as irritating or abrading the mucosa, were added. Inoculation was performed by simply tilting the head back so that the material would gravitate into the nose, and the filtrate was dropped into the nasal opening from a capillary pipet. From 3 to 6 drops of the filtrate were placed in each nostril.

A detailed report of the case histories in these experimental cases is reserved for a later publication. Suffice it to say that nine of the ten men inoculated developed the usual symptoms of acute coryza in from eight to thirty hours. The first symptoms, as a rule, were dryness of the nose and throat and attacks of sneezing. These were followed in a few hours by nasal stuffiness and dull frontal headache with pain over the sinuses. Several of the men complained of alternate sensations of chilliness and flushing. There was copious rhinorrhea, usually on the second or third day, in the majority of the cases. Six of the men exhibited slight rise in temperature, from 99.2 to 99.8, and in these cases the pulse was accelerated. Tinnitus aurium and slight deafness were recorded in four instances; sore throat in five; cough in three, and aching pain in the back or extremities in three. Two of the men complained of parotid tenderness and difficulty in mastication; and, in another case, a profuse crop of herpes labialis was noted. The duration of the symptoms varied from three to six days.



Appearances of subcultures of nasal secretion filtrates in tissue-ascitic fluid medium. Much of the definition observed with proper lighting is lost in the photograph, but the opalescence described in the text is evident in the three tubes to the right of the illustration. The tube on the extreme left is a control tube of the uninoculated medium.

ATTEMPTS TO CULTIVATE AN ORGANISM

The results of the inoculation experiments with nasal secretion filtrates, and the sterility of these filtrates as regards organisms capable of demonstration by ordinary bacteriologic methods, seemed to indicate clearly that the infective agent is a filterable virus. The successful cultivation of the parasite of rabies by Noguchi,[2] and the causative organism of poliomyelitis by Flexner and Noguchi[3] — both organisms being "filter passers" — suggested the application of methods similar to those of Noguchi in attempting to grow an organism from the nasal secretion filtrates.

Several mediums were used in the earlier experiments, and of these the most suitable have proved to be tissue-ascitic fluid and tissue broth. About 15 c.c. of the ascitic fluid or broth are poured into each of several test tubes measuring 1.5 by 20 cm., and a small piece of sterile fresh rabbit kidney is placed in the bottom of each tube with strict aseptic precautions. About 4 c.c. of sterile liquid petrolatum is then poured on the fluid medium, and the tubes incubated for several days at 37 C. and at room temperature, to insure their sterility. After a day or so, some of the blood from the kidney undergoes hemolysis and imparts to the medium surrounding the fragment of tissue a rose colored tint; but in tubes that are not contaminated, this zone of hemolysis remains brilliantly clear. Any tubes showing haziness or cloudiness should be discarded. The ascitic fluid should be originally sterile and not subsequently sterilized by fractional heating or filtration. For the preparation of tissue-broth medium I have used a veal-infusion broth with a reaction plus 0.8 per cent. acid to phenolphthalein. The broth is autoclaved before the tissue is added.

Sterile capillary pipets, with the capillary end drawn out to a length of about 25 cm., are used in inoculating the culture tubes. About 0.5 c.c. of the nasal secretion filtrate is drawn into the pipet and, with the exercise of great care that no air bubbles are introduced below the layer of oil, the tip of the pipet is thrust through the medium to the bottom of the tube and the filtrate introduced into that part of the medium immediately surrounding the tissue. The introduction of air bubbles at the end of the procedure may be obviated by not entirely emptying the pipet of its contents. It has proved unnecessary to incubate the tubes anaerobically, as adequate anaerobiosis is furnished by the piece of tissue in the medium.

APPEARANCE OF CULTURES

The original cultures were made from filtrates of three nasal secretions which, subsequently, proved infective by the inoculation experiments outlined above. The appearance of the cultures was identical, but varied slightly in degree. A distinct, filmy, grayish-white, opalescent halo, superimposed on a cloudy hemoglobin-stained zone surrounding the tissue, was observed at the end of twenty-four hours in both ascitic fluid and broth. This halo or ring was sharply demarcated from the clear fluid above, and showed no tendency to blend with it. The appearances were not unlike those resulting from the addition of nitric acid to urine containing a marked trace of albumin. At the end of forty-eight hours, the changes were at least 100 per cent. more marked, while on the third day the tissue was more or less obscured by the density of the cloudiness surrounding it. On the fourth day the upper column of fluid, which had heretofore remained clear, showed slight uniform haziness which increased in density subsequently. No precipitate, flocculi or granules were noted.

Control tubes inoculated with salt solution showed a very faint halo at the end of twenty-four hours, similar to that observed in the culture tubes; but there was no cloudiness in the hemoglobin-stained zone,

2. Noguchi, Hideyo: Contribution to the Cultivation of the Parasite of Rabies, Jour. Exper. Med., 1913, xviii, 314.
3. Flexner, Simon, and Noguchi, Hideyo: Experiments on the Cultivation of the Micro-Organism Causing Epidemic Poliomyelitis, Jour. Exper. Med., 1913, xviii, 461.

and the reaction did not become intensified on subsequent days. After two weeks' incubation, some autolysis of the tissue in the bottom of the tubes became evident, and haziness of the supernatant fluid medium occurred, due probably to admixture of minute particles of the autolyzed tissue carried up by convection waves. The general appearances were quite different from those in the culture tubes.

Subcultures were made from the original cultures after four days' incubation. The changes in the subculture tubes were more marked than in the original cultures, and the marked cloudiness in the tissue zone exhibited more tendency to extend upward and diffuse into the clear medium. Subcultures have been carried to the fourth generation, and it appears that they may be carried on indefinitely. In addition to the cultures of the three original filtrates, cultures, which in no way differ in appearance from those described, have been obtained from the nasal filtrates in seven cases of coryza induced by experimental inoculation.

MICROSCOPIC EXAMINATION OF CULTURES

Cultures examined under the dark-field microscope showed myriads of extremely active, minute bodies occurring singly, in pairs and in agglomerations of varying magnitude. The bodies were so active and so minute that a definite idea of their morphology could not be formed. Some showed to and fro progression, and others exhibited a tumbling type of motion — end over end. The bodies appeared to possess true motility rather than brownian movement. In addition to these bodies, there was the usual dark-field picture of dancing granules and detritus. Dark-field preparations from the medium at the bottom of tubes which had not been inoculated showed minute bodies similar to those observed in cultures, but in infinitely smaller numbers. The overwhelming predominance of these bodies in the culture preparations and their uniformity in appearance, in conjunction with the possession of what appeared to be true motility, might readily lead to the conclusion that the bodies are micro-organisms. However, the interpretation of dark-field pictures is attended with many pitfalls except when one is dealing with known organisms of definite morphology; and the conclusion that these bodies are micro-organisms would not be tenable without additional evidence.

Stained smears from the cultures showed no bodies that could be definitely recognized as micro-organisms. Preparations were stained by Gram's method and Claudius' method and with carbol-fuchsin, dilute fuchsin, Loeffler's methylene blue, dilute gentian violet, carbol-gentian violet, Nastikow's violet, Giemsa's stain and Wright's stain. Minute coccoid bodies and occasional rodlike forms were demonstrable in all of the preparations, but not in sufficient numbers to preclude the possibility that they were artefacts.

INOCULATION EXPERIMENTS WITH CULTURES

The attempt to demonstrate visible and unmistakable micro-organisms in cultures which macroscopically exhibited changes suggesting micro-organismal growth having failed, attempts were made by inoculation tests to demonstrate the presence of an infective agent in the cultures.

Subcultures which have been incubated seven days were used in the experiment. Portions of the subcultures were diluted ten times with sterile salt solution and passed through small Berkefeld N filters. The resulting filtrates were perfectly clear, and they were shown to be sterile by approved bacteriologic methods. By dilution of the nasal secretion with salt solution, the further dilution occasioned by the fluid culture mediums, and the final dilution of the portion of subculture used with sterile salt solution, the constituents of the original nasal secretion that were capable of filtration had reached, in these filtrates, a dilution of 1:90,000 plus the unknown original dilution occasioned by the fluids of the nasal secretion itself.

Eleven soldiers voluntarily submitted to inoculation with these filtrates. The technic of inoculation was identical with that used previously in the experiments with nasal secretion filtrates. Five drops of the diluted culture filtrate were dropped into each nostril.

Following an incubation period of from eight to forty-eight hours, all of the men became ill with acute colds. In one case the attack was mild or abortive and lasted but a few hours. The only symptoms in this case were an initial dryness of the nose and throat followed by slight transitory rhinorrhea. In the remaining cases the symptoms persisted for several days and consisted of sneezing, lacrimation, dryness of the nose and throat followed by swelling of the nasal mucosa and copious rhinorrhea. Practically all of the men complained of dull frontal headache and more or less discomfort over the frontal sinuses. Three of the patients exhibited rise of temperature and aching pain in the back and extremities. Cough was recorded in five cases.

Berkefeld filtrates were prepared from the nasal secretions in five of these experimental cases, the secretions being collected forty-eight hours after inoculation. Tubes of tissue-ascitic fluid were inoculated with 0.5 c.c. each of the filtrates in the manner previously described. After twenty-four hours' incubation, four of the cultures showed the characteristic appearances observed in previous cultural experiments. The medium in the fifth tube remained unchanged; but another nasal secretion filtrate in this case, prepared from secretion collected seventy-two hours after inoculation, gave positive results.

COMMENT ON RESULTS

From the experimental evidence presented in this preliminary report, it seems logical to conclude that common colds — of a certain type at least — are infectious; that the causative virus occurs in the nasal secretions, and that this virus is capable of passing through a Berkefeld N filter which has proved impermeable to ordinary bacteria. The result of these observations as to the locus of the infective agent indicates that transmission of colds from the infected to others may occur through "droplet infection" or other means of direct or indirect contact.

The cultural experiments suggest that, although its exact nature has not been proved, a virus from the nasal secretions of persons ill with acute colds has been cultivated in vitro, and that Berkefeld filtrates of subcultures of this virus are capable of producing symptoms of an acute cold in healthy persons. There are certain facts which favor such interpretation of the experimental results. The filterable constituents of the original nasal secretions were in a dilution of 1:90,000 plus in the filtrates of subcultures which produced colds experimentally; and it is beyond the realms of imagination that any toxin, virus or enzyme originally existing in the secretions could have been carried over mechanically and, in this high dilution, have exhibited

pathogenicity. Such pathogenicity is possessed, so far as is known, only by organisms capable of growth and multiplication. Secondly, the cultures showed changes which ordinarily are interpreted as indicative of bacterial growth, and these changes were not observed in controls or in uninoculated tubes of medium incubated with the cultures. Again, the changes observed in the original cultures were intensified in successive subcultures, thus bearing an inverse relation to the dilution of the material originally introduced. This phenomenon frequently occurs during the continuous cultivation of known organisms as the result of acquired adaptability to the conditions in an artificial medium. It is conceivable, if explanation of the changes is attempted from another point of view, that the cultural appearances described might be due to lysis of the tissue fragment with consequent clouding of the medium, this disintegration being induced by the action of proteolytic enzymes elaborated by an ultramicroscopic organism.

On the other hand, in the absence of ocular proof that micro-organisms, definitely recognizable as such, exist in the cultures, the assertion that a virus has been cultivated is reserved until additional evidence may accrue. I feel, however, that the observations reported have significance, and that the subject merits further study. It is hoped that additional experiments, now contemplated, may elucidate certain matters which are not clear at the present time.

In conclusion I desire to express my appreciation of the spirit of the enlisted men of the Hospital Corps and Coast Artillery Corps of the Army who, without pecuniary reward and at the expense of considerable physical discomfort, voluntarily submitted to the inoculation experiments recorded herein.

Fort Banks, Mass.

METABOLISM IN INSANITY*

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It has, I think, become increasingly evident, during the last few years, that in approaching the problem of the pathology of insanity, we are obliged to turn our attention more and more to basic physical, chemical and biologic facts. The departures from the normal that have been brought to light by an increasing knowledge of the interplay of infection and immunity —in other words, of the processes embraced under the general term "fermentation"—as well as the phenomena presented by the internal secretions, that is, by the various hormones, direct our attention forcibly to the question of the very structure of the substances of which our bodies are composed. A moment's reflection makes us realize that all of our fluids and tissues are present in a special form of matter, namely, matter in a colloidal state; and it is the structure of colloids, their physics and chemistry, and especially their phenomena as presented by the living plasma, that constitute some of the most pregnant questions of our day. These questions, indeed, are so fundamental that they have to do with the very nature of life itself. Without, however, allowing ourselves to go too far afield, let us turn our attention first to the elemental facts of the structure of colloids and to endeavor, at least in some degree, however small, to interpret their significance. That such an interpretation should from the very nature of the subject be alike imperfect and inadequate, should not deter us.

To begin: A colloid is a state, not a form, of matter. Many substances which commonly present themselves as crystalloids are, as is well known, also obtained as colloids. Thus many mineral substances, common salt, various metals—gold, silver, mercury—oxids, sulphids, etc., have been prepared in the colloidal state. These colloids share with the organic colloids, for instance, albumin, gelatin, starch, one common property, namely, of not being capable of osmosis. Evidently the failure to osmose must depend on the structure of the colloid. The particles—whether these be molecules or aggregations of molecules—are evidently too large to pass through the pores or interstices of the intervening membrane. That this is not a mere inference and that colloids actually contain such particles has been proved by the ultramicroscope. Indeed, in the instance of some inorganic colloids, it has been possible to estimate the size of the particles.

The most important inference for us, however, is that colloids do not consist of solutions, but of at least two substances, one a medium and another held in suspension. The substance which is diffused in the form of small particles through the colloid is spoken of as the disperse phase, while the medium in which they are suspended is spoken of as the continuous phase. The disperse phase may consist of solid particles, in which case the colloid is spoken of as a suspensoid, or the disperse phase may consist of liquid particles, in which case the colloid is spoken of as an emulsoid. Finally, a colloid may contain more than one disperse phase, and may thus add greatly to the complexity of its structure.

The physical properties of colloids are most interesting and important. Among these are surface tension and surface energy. The surface of a liquid is in tension against its own vapor, or, in the case of an emulsoid, against the liquid which constitutes the continuous phase. In speaking of this phenomenon as presented by the disperse phase, it is termed "surface tension"; in speaking of this phenomenon as presented by the continuous phase, it is termed "interfacial tension."

Obviously, the sum total of surface energy must depend, among other things, on the amount of surface. That the latter is greatly increased in such a structure as a colloid, in which, of necessity, the disperse phase consists of a vast number of minute particles, is readily comprehended. Thus, it is estimated that in a liter of colloidal gold solution of 0.5 gm., in which each particle has a diameter of 15 submicrons, the total surface of gold is equivalent to 65 square meters. It is clear that analogous conditions exist in protein and other organic colloids. Finally, that the surface energy is the product of the surface tension multiplied by the amount of surface is also evident.

Surface tension and therefore surface energy are influenced by various factors, especially by adsorption. In order that a clear conception may be gained as to what is meant by adsorption, a few illustrations from the domain of physics will suffice. Bunsen, for instance, showed many years ago that a plate of glass immersed in water and subsequently dried by ordinary means still retained on its surface a layer of water which, though exceedingly minute, could not be

* Presidential Address, read before the Philadelphia Psychiatric Society, Jan. 14, 1916.

removed unless the plate were heated to a temperature of 500. A pebble which has been immersed and subsequently dried retains on its surface a layer of water which will require a force equivalent to many hundreds of atmospheric pressure for its removal. Again, spongy platinum has the faculty of condensing gases on its surface so that under given conditions it rapidly rises in temperature and thus may cause the union of two gases such as hydrogen and oxygen to form water, or of nitric oxid and hydrogen to form ammonia. Charcoal, which, like spongy platinum, presents a large surface, has also a capacity for condensing large volumes of gases.

The structure of colloids, because of the minute division of the particles of the disperse phase, is such that an enormous surface is developed; and that colloids necessarily present the phenomena of adsorption need hardly be pointed out. As a matter of fact, colloids have the property of taking dissolved substances out of solution and of holding them with great intensity. Surface energy is influenced by the degree of concentration of such adsorbed substances. Increased concentration results in a reduction of surface tension and, as in the case of spongy platinum, in a release of energy. This is a fact of the greatest possible significance.

Surface energy is thus transformed, under various circumstances, first, into gross physical energy, for example, such as may bring about changes of volume, secondly, into heat, thirdly, into chemical energy, and lastly, into various forms of energy observed in living organisms, among them neuromuscular and possibly also psychic energy. It is somewhat difficult to grasp adequately the significance of this fact and to conceive of the enormous amount of surface energy contained in organisms, especially in the larger multicellular forms.

Another fact demanding consideration is that of the brownian movement. The particles of the disperse phase are not at rest. They are in constant motion, a motion difficult to describe, into which vibratory and rotatory factors as well as progressive change of position enter. The particles are electrically charged, and it would appear that these movements have to do with the stability of the colloids; the particles tend to fill the space in which they are contained like the molecules of a gas, and in this way tend to prevent the separation of the disperse from the continuous phase; but this must of course not be regarded as the principal significance of this movement. It is interesting to note that the majority of the albumins, lecithin, fats, starches, dextrin, glycogen, etc., are electronegative. In emulsoids the charge bears a relation to the contained electrolytes. Albumins, for instance, may change their electrical reaction in accordance with the addition of this or that electrolyte, that is, in accordance with the electric charge of the ion adsorbed. Further, the addition of an electrolyte results, first, in a diminution of the total surface of the disperse phase, that is, in an increase in size of the individual particles. With further addition of the electrolyte, a separation and precipitation occur. In one instance the precipitation may be brought about by anions and in another by cations. To bring about precipitation in an unstable colloid a minimal amount of electrolyte suffices. Stable colloids, on the other hand, require a large amount of electrolyte. The greater number of colloids of the animal organism belong to the stable group.

Much more complicated reactions follow when one colloid is added to another; these reactions depend on the electrolytic tension, the presence of different electrolytes, and on other circumstances still obscure in their nature. It is safe, however, to conclude that all of the factors concerned have a bearing on the life of the cell, on the metabolism of the organism, and especially on the processes of infection and immunity, on the problem of intoxication and on the formation of antibodies. The thought also is suggested that a given toxin may cease to act as a poison, not because it forms a combination with its respective antitoxin, but because the particles of its disperse phase, under the influence of the antitoxin, are forced into larger aggregations, undergo a diminution of their surface energy, and thus become incapable of acting any longer as a poison, no longer capable of acting deleteriously on the other proteins of the body. This conception bears in itself new possibilities in the battle against toxicity.

A consideration of the reaction of colloids on each other leads necessarily to the subject of fermentation. The analogies already pointed out between adsorption as exhibited by spongy platinum, and the same property as exhibited by colloids, suggests that the changes induced in other bodies are in both instances alike physical and chemical in nature, and perhaps the word "fermentation" will at some time in the future give way to another clearly expressing this fact.

Of late the entire subject of fermentation has assumed a most interesting aspect. This is well illustrated in the behavior of unicellular organisms. The unicellular organism must possess ferments which are prepared to deal with definite substances. These substances are reduced by successive stages to simple constituents, and in this process release their contained energy, and in this reduced and subdivided state are incorporated into the body of the cell. This is well illustrated in the instance of the torula. The torula does not schematically and at once decompose the grape sugar into alcohol and carbonic acid, but this is accomplished by a series of successive stages; by a series of intermediate reactions. This fact is also true of the reduction of amino acids, of the purin bases and of other substances. While some cellular forms possess ferments accurately adapted to a specific substrate, there are others in which this is not the case, and such organisms present a wider range and greater possibilities of action. Some unicellular forms, again, are able to add to their substance from simple chemical compounds, such as ammonia, nitrates, carbonates, water and salts. Others again can build themselves up only out of proteins, and the latter are incorporated only after being reduced to exceedingly simple constituents capable of taking their place in the cell body.

In multicellular organisms, a great specialization of ferment production takes place. The various organs produce substances possessing a highly specific character. These enter the blood, but they affect the cells of certain other structures only. Abderhalden illustrates this fact by the instance of the hermaphroditic pheasant in which a testicle is found on one side and an ovary on the other. The internal secretions of both glands enter the circulation, but each acts only on certain cells of its own half of the body. This is shown by the plumage, which presents the male characteristics on the side of the testicle and the female characteristics on the side of the ovary, the two being sharply differentiated in the middle of the body. To state it in other

words, we may say, also, that although the internal secretions of both glands are present in the blood plasma, the cells of the male and female half of the body respectively reduce, that is, split up, the materials offered by the blood plasma into components adapted to and peculiar to their own structure only.

It would appear that the cells of the various tissues possess a special structure and a special metabolism; that is, each cell contains a special ferment. It is by means of this ferment that the cell builds itself up, adds to its own substance, out of the general material of the blood plasma. Abderhalden assumes that, in addition, in each species of cell other ferments are present which are common to all the other cells of the body. Finally, a regular and undisturbed continuance of the manifold cell processes presupposes a certain constancy of relations and a delicate quantitative and qualitative regulation of metabolism.

Abderhalden divides substances according to the rôle they play in metabolism and in reduction respectively as follows: first, substances foreign to the body, that is, substances which in structure differ from those entering into the constitution of the organism, such as the foods, and secondly, those which are peculiar to the body, that is, substances which have been completely transformed so as to correspond or conform to the constituents of the body. Among the latter are substances peculiar to the cells and others peculiar to the plasma. Further, the substances peculiar to the plasma are foreign to the cells of the blood and the cells of the tissues, while the substances peculiar to the cells are foreign to the plasma. Again, substances that gain access to the plasma in an insufficiently reduced condition are foreign to the plasma. Only materials peculiar or conformable to the body and to the plasma can be incorporated by the organism. The access of raw and insufficiently reduced, that is, subdivided materials is guarded against by the cells of the intestinal tract and by the cells of the accessory glands, especially the liver. Again, from within, the cells of the body in their turn yield into the blood stream only such substances which have been split up so that their cell type has been lost.

These orderly physiologic processes are disturbed when foreign substances gain access to the circulation, and the question arises, How does the organism defend itself under these conditions? Experiment and observation have shown that the cells of the interior of the body have retained some of the primitive function of digestion possessed by simple nonspecialized cells. They, like the cells of the intestinal tract, have the power of reducing foreign materials, of converting the latter into indifferent substances, of fragmenting them, of utilizing them for purposes of reconstruction or as sources of energy. They are able to split fat into alcohol and fatty acids, to break up complex carbohydrates, to split up albumin into peptones, to degrade the latter to amino acids, and the amino acids into still simpler components. As we have seen, a considerable part of the process of cell metabolism is brought about by ferments. Other things being equal, every body cell is capable of digestion. Even the blood plaques are able to bring about hydrolytic cleavages.

The blood plasma does not in man under normal conditions manifest this power, but Abderhalden found that if plasma-foreign or body-foreign substances are introduced parenterally, the blood plasma shows new properties. He found that protein substances are split up; polypeptids undergo cleavage, and similar results were obtained in regard to other substances. The formation of ferments in the plasma also occurs when the intestinal tract is overfilled with proteins, peptones or carbohydrates. For instance, in massive egg-feeding, unchanged protein enters the blood and can be demonstrated by the presence of ferments. This is a most suggestive fact when we reflect on the results of overfeeding in exhausted states and on the rôle which overfeeding plays in hastening the formation of antibodies.

Abderhalden, as is now well known, terms the ferments the result of parenteral injection, "defensive ferments." They appear to have their origin from the leukocytes and probably also from the red blood cells and blood plaques.

In the instance of pregnancy, in which a substance normal to the body and yet foreign to the plasma is circulating in the blood, Abderhalden made the important discovery that the serum of pregnant women always contains defensive ferments against placental protein; that is, ferments which digest, i. e., reduce placental tissue. The villi of the chorion appeared to be the source of the protein, and yet the serum of the pregnant mare, whose placenta possess no villi, also yields the reaction. These defensive ferments of pregnancy are already demonstrable in about eight days after conception, are present during the entire period of gestation, and disappear in from fourteen to twenty-one days after expulsion of the placenta, or after separation of the placenta from the body of the uterus has occurred. Abderhalden has made the differential diagnosis between pregnant and nonpregnant women in some hundreds of cases.

Various confirmatory observations have been made in other fields. Bauer found lysis of thyroid gland in endemic goiter. Abderhalden found the same thing in a case of myxedema. Lampé and Papazalu found in exophthalmic goiter a lysis of thymus, thyroid and ovary. In scleroderma Bauer and Remes found a lysis of the thyroid.

Fauser was the first to realize that the Abderhalden method must prove of great significance for psychiatry. He at once began his studies, and in 1912 made his first communication on the subject. By May, 1913, he had studied upward of 250 insane and thirty noninsane persons. In the great majority of the dementia praecox cases Fauser found defensive ferments against the sex glands and against the cortex. He assumes that a primary dysfunction of the sex glands leads to the entrance into the blood of unchanged sex gland protein, and that in the subsequent breaking up of this protein, substances are formed which are injurious to the cortex. The substance which enters the circulation is of course the internal secretion, the hormone, of the sex gland, not the germinal product. The blood in male dementia praecox cases digests testicle only, not ovary; that of female cases ovary only, not testicle.

Only in dementia praecox cases could Fauser demonstrate defensive ferments against the sex glands. In cases in which a digestion of the sex glands was unexpectedly found and in which a diagnosis had previously been made of manic-depressive insanity or of other functional psychoses, the further clinical course of the cases proved that they were really cases of dementia praecox and that the serologic diagnosis had been the correct one. In a number of less definite

cases of dementia praecox in which defensive ferments against the sex glands were found only at times, it seemed as though this dysfunction ran parallel with fluctuations in the clinical course. In some cases again in a terminal and stationary condition, that is, in cases in which the pathologic process had run its course, no defensive ferments were found against either the sex glands or cortex.

In paresis Fauser found with diminishing exceptions defensive ferments against the cortex. Probably here also the dysfunction is not a continuous one, as the defensive ferments are not at all times present. The spinal fluid never contains ferments against the cortex, not because abnormally metamorphosed cortex products are not present, but because the spinal fluid cannot develop ferments. As in dementia praecox, the dysfunction of the cortex and eventually of other organs is not primary. In paresis the primal factor is the presence of the spirochete protein in the blood. In addition, it is not improbable that the defensive ferment formed against the spirochete protein also digests the cortex, and finally that the digested cortical substance in turn evokes the formation of a second ferment against nerve substance generally. Under such circumstances a continuous automatic lysis of the brain will take place without further intervention on the part of the spirochete.

In the so-called function psychoses — manic-depressive insanity and the simple psychopathic states — Fauser never found defensive ferments against the cortex or against the sex glands, the thyroid, pituitary, pineal or suprarenals, or against muscle, liver or kidney. It would seem that in the functional psychoses a coarse dysfunction of the cortex or other organs is not present, but rather that there is present an excessive or an insufficient production of some normal secretion, against which a defensive ferment is not formed. It would appear that we have in these facts the possibility of a differential serologic diagnosis between dementia praecox and functional forms.

Fauser's results have been confirmed by a number of other investigators. Thus Roemer and Bundschuh in a large number of cases achieved results in entire uniformity with those of Fauser. Similar results followed the investigations of Wegener, who had been personally instructed by Abderhalden in the methods. His studies included over 200 cases, and the further clinical course of all these cases confirmed the serologic diagnosis. Fischer studied twenty-four cases, and his results were in entire conformity with those of Fauser in 107 of the 115 tests made, and he is inclined to regard the defensive ferments found by Fauser in the insane as specific. Kafka, who has also made a very careful study of the subject, concluded that typical dementia praecox cases are distinguished by the formation of defensive ferments against the sex glands. Similar results, varying of course in detail, were obtained by Ahrens, Neue, W. Mayer and others. Mayer has proved by experiments on animals the absolute specificity of the Abderhalden defensive ferments.

The literature on the subject is already very extensive, and cannot even be summarized in an address. Suffice it to say that the Abderhalden method has been applied to the most varied clinical forms and often very extensively. For instance, Wegener had by January, 1914, studied about six hundred cases at the psychiatric clinic at Jena. Every case was tested with a large number of organs and tissues, for instance, with testicle, ovary, brain, spinal cord, nerve, lung, liver, pancreas, thymus, kidney, suprarenal, thyroid and muscle. His results may be briefly summarized by the statement that defensive ferments were found in all cases in which organic changes existed, while in purely functional cases, such as hysteria, manic-depressive insanity and paranoia, all examinations were negative; this was also the result in normal persons. The fact that in manic-depressive insanity no lysis was ever found proved frequently to be of value in the differential diagnosis from dementia praecox, the diagnosis being confirmed by the further clinical observation of the cases.

Similar results to the foregoing were achieved by Fuchs and Fremd, Golla and others. However, while a large number of investigators have confirmed more or less closely the observations of Fauser, failure to confirm, differences of results and criticism of both the method and the observations have not been wanting.

In a field so new as this, and in which the methods require such extraordinary care and precision, this is hardly surprising. Among those who have especially assumed an attitude of opposition should be mentioned Plaut, who has gone so far as to say that the observations of Fauser and others are the results of autosuggestion. He has, however, been sufficiently answered by Fauser, and especially by Kafka, who points to the uniformity of his own findings in the absence of any knowledge on his part as to the diagnosis of the patients from whom the serums were furnished. Further, Lampé claims the absolute specificity of the defensive ferments.

That the Abderhalden method will gradually be developed more and more there can be no doubt. Sagel, for instance, reports that he has succeeded in detecting specific ferments in the urine by means of a specially constructed polariscope. Hirsch has also by means of a new method determined the changes in concentration which ensue in the serum as a result of the solution of the peptones formed by the defensive ferments from the organic substrate. His results demonstrate the correctness of Abderhalden's views concerning both the occurrence and the specificity of the defensive ferments. Kafka and Pförringer have shown that when proteins are injected into the peritoneal cavity, proteolytic ferments can be demonstrated in the blood serum three days later, and further, that these ferments react in an absolutely specific manner on the substance used, as in the case of blood corpuscles on blood corpuscles. Kafka and Pförringer further conclude from their studies that the white cells, especially the polymorphonuclear leukocytes, play an important rôle and are absolutely necessary for the formation of a specific ferment in the blood.

Nieszytka has tabulated the results of the various investigators, and concludes that the differential diagnosis of dementia praecox from other clinical forms is furnished by the lysis of the sex glands, and that the serologic diagnosis of dementia praecox is more certain than the clinical.

The facts revealed by the Abderhalden method appear to justify the following conclusions:

1. In all cases in which either as a result of defective or aberrant organization, or of other disease, abnormal substances find their way into the blood, defensive ferments are evoked.

2. The ferments produced by the defense reaction are frequently injurious to substances other than those which gave rise to them. Notably is this the case in the instance of the cortex in dementia praecox, and perhaps also in paresis.

3. In cases in which no defensive ferments can be found, it is safe to infer that the affection is one unattended by organic changes and that it belongs to one of the purely functional groups, namely, to manic-depressive insanity or to the psychasthenic psychoses.

4. Ferments may be absent in late organic or terminal cases, as in terminal dementia praecox; when the disease has run its course, a time may be reached when poisonous substances are no longer thrown into the circulation, and in consequence defensive ferments no longer formed.

5. The toxicity in manic-depressive insanity and in other functional states appears to be due to a quantitative change rather than a qualitative change in substances normally present. In all instances, however, the symptoms are due to toxic agents, for substances in excess or abnormally deficient have all the value of poisons.

Time and the objects of this address will not permit of a consideration of the hormones, a subject which naturally suggests itself as next in order. Suffice it, however, to call attention to the fact that an internal secretion may vary in three ways: first, it may be excessive in amount, second, it may be deficient in amount, and third, it may be changed or perverted. In the latter case it will lead to the formation of defensive ferments, just as in the case of a foreign substance introduced from without.

In dementia praecox we have an instance of such a perverted secretion, namely, a qualitative change in the hormone of the sex gland. Not only is there, in addition, the development of defensive ferments injurious to the cortex, but there are also present symptoms indicating that these ferments react on the sympathetic and autonomic nervous system. Among these symptoms are such as are referable to the circulatory apparatus, to the digestive tract and to other very special forms of apparatus, such as the iris. Such phenomena are quite frequent in mental affections other than dementia praecox, and it is quite probable that they are always the result of the action of toxins on the sympathetic and autonomic nervous system.

The field which here opens to our view is so large that in the present address it can admit of only the most cursory treatment. The physiologist Langley, it will be remembered, renamed the sympathetic nervous system the autonomic nervous system, largely on the basis that the structures supplied by the sympathetic nerves are independent of the will. The cerebrospinal nerves which execute the mandates of the will, that is, carry out voluntary movements, terminate only in striated muscular fiber. The sympathetic nerves, on the other hand, terminate in smooth muscular fiber and in glandular tissue; in other words, the sympathetic fibers include all efferent nerve fibers except those which go to the voluntary muscles. In accepting the term "autonomic" as a substitute for the term "sympathetic" nervous system, we should bear in mind, however, that the first or proximal neuron of this apparatus is always situated in the gray matter of the cerebrospinal axis, that is, in the cord or in the brain stem. Further, this proximal neuron gives off an axon which, passing out by way of the rami communicantes, terminates in an arborization about the distal neuron situated in the sympathetic ganglion. Thence fibers pass to smooth muscle or gland. The sympathetic nervous system thus has an origin which is primarily cerebrospinal, and it is really an integral portion of the cerebrospinal apparatus. It is certainly not an independent system, and is only in a measure autonomic.

In recent years this sympathetic or autonomic nervous system has come to be divided into the so-called autonomic nervous system proper and the so-called sympathetic nervous system proper. The word "autonomic" is applied to that portion above the second dorsal segment of the cord and to that portion below the second lumbar segment, while that portion included between these levels is spoken of as the sympathetic proper. This division, which has no biologic basis, is made rather arbitrarily on the differences in function which obtain in some measure between the two. For instance, fibers of the sympathetic proper pass from the upper dorsal cord through the superior cervical sympathetic ganglion to the dilator muscle of the iris, to the constrictor fibers of the vessels supplying the ear, the oral and nasal cavities, the eyeball and the salivary glands. On the other hand, autonomic fibers, so-called, originate in proximal neurons in the midbrain, accompany the oculomotor nerve and terminate in arborizations about cells in the ophthalmic ganglion, from which fibers in turn originate which supply the ciliary muscle and the constrictor fibers of the iris; at the same time other autonomic fibers supply the dilator fibers of the vessels of the mucous membrane of the mouth, throat, nose and nasal sinuses and also the salivary glands. A similar duplex arrangement exists in the innervation of the heart, for example, a sympathetic innervation through the accelerator nerves and an autonomic innervation through the vagus. Likewise duplex innervations can be traced in the glands of the mucous membrane of the trachea and bronchi, the muscles of the trachea and bronchi and the glands and muscles of the intestinal tract from the esophagus to the anus and also in the case of the urinary bladder, genital organs and the vessels of these structures. To a degree these two systems are physiologically antagonistic to each other, and are each capable of separate stimulation. For instance, epinephrin induces contraction of the blood vessels, acceleration of the heart's action, dilatation of the pupils, drying of the mucous membranes, inhibition of the salivary glands, and inhibition of the motility and secretion of the stomach and of the intestines. Epinephrin, therefore, stimulates the sympathetic fibers proper and may therefore be said to be sympathicotropic and sympathicotonic.

Just as epinephrin stimulates the sympathetic system, so does pilocarpin stimulate the autonomic system. Pilocarpin is a vasodilator and in full doses slows the heart's action. At the same time it stimulates glandular action, the perspiration and saliva being greatly increased. The pupil also is contracted, and gastric and intestinal movements, as has been shown in experiments on animals, are increased. Pilocarpin can therefore be spoken of as autonomic-tropic, or, to employ the term actually in use, vagotropic and vagotonic.

Again, atropin acts as a paralyzer of the autonomic apparatus. There is here, because of the paralysis of the autonomic apparatus, dilatation of the pupils and

arrest of the secretions. In full doses the heart beats become exceedingly rapid, the pulse ranging from 120 to 160. Atropin is therefore vagotropic, but is paralyzing in its action instead of being vagotonic.

Less is known about substances or poisons which, being sympathicotropic, also paralyze the sympathetic. In paralysis of the sympathetic, there would be vascular dilatation, contraction of the pupils, slowing of the heart's action, and increased glandular activity; but when we come to look for poisons having such an action we cannot find one which will fill all of the requirements. Morphin, which contracts the pupils, and slows the heart's action, is an indifferent vasodilator; and, instead of increasing the secretions, inhibits them, unless it be that of the skin. Similarly when we turn back to stimulating drugs of the autonomic apparatus, among which, in addition to pilocarpin, may be mentioned physostigmin, cholin and digitalis, we find that there are many variations in the details of their action which do not admit of an explanation limited to an exclusive and stimulant action on the autonomic apparatus. This, it may be added, is also true of the paralyzing drugs.

When we turn our attention to the action of the internal secretions, as that of the thyroid or pituitary glands, we encounter similar difficulties. Time will not permit of a detailed discussion, but it is clear that poisons do not necessarily limit themselves in their action to one or the other subdivisions of the sympathetic system. A complete antagonism, such as outlined, does not always obtain. Sometimes portions grouped on the one hand among the autonomic or on the other hand among the sympathetic, are variously acted on by the same poison. However, for us, the fact of the direct action of special substances on various parts of the sympathetic nervous system is one of the very greatest significance, and in the recognition of this fact must lie the explanation of some of the symptoms encountered in insanity. Among the latter are the atony and dryness of the digestive tract, the phenomena presented by the circulation, the pallor, coldness and other appearances of the body surface, the dilatation or the contraction of the pupil, and other symptoms as well. The point which should be emphasized is that these phenomena must be referred to a toxic action, an action which expresses itself through the sympathetic nervous system. The latter — calling it as we will, autonomic or sympathetic — acquires additional significance when we reflect that it is through this system that the emotions, the affects, mainly find expression. Here is another fruitful field for thought, especially when we think of melancholia and mania. In closing, I may be pardoned if I venture to outline the position from which, in my judgment, the investigator should approach the problem of the pathology of insanity. He should prepare himself somewhat as follows:

1. He should study the physics of the colloids; the physics of life is largely the physics of the colloids.

2. He should study the chemistry of the colloids; the chemistry of life is largely the chemistry of the colloids.

3. He should investigate the interaction of colloids among each other, both physical and chemical, that is, he should investigate the subject of the ferments.

4. He should apply the facts acquired to the field opened up by Abderhalden and Fauser.

5. He should include in his studies the actions of the ferments, toxins or hormones on the sympathetic and autonomic nervous system; and, under these circumstances and under given conditions, the reactions of the glands of internal secretions.

Finally, he may venture to study the brain tissue itself; but the pathology of insanity is not a gross pathology. When gross changes are present, they are — with few exceptions —probably and properly to be regarded as late or terminal.

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HEALTH SUPERVISION IN SMALL TOWN SCHOOLS

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Since its inception in San Antonio twenty-five years ago, medical inspection of schools has been slow enough in coming into its own. It is perhaps only within five years that rapid advances have been made. At present most cities have some type of a medical inspection system, but on close scrutiny one is led to believe that many of these have been established as a mere formality. However, where a start has been made, future improvement may well be hoped for.

What of the small towns, those that number from 2,500 to 5,000 population? As is often the case with progressive measures, the small cities and towns have not been quick to accept medical inspection. The reasons for this stand are many, chief among them being a somewhat narrowed administrative perspective and false ideas of economy. Then, too, it may quite truthfully be stated that because of the usually superior housing, sanitary and other environmental conditions, the need for medical inspection is not so imperative in the smaller communities. On the other hand, and contrary to a general opinion, there are more children in the rural districts than in the cities.[1] The children of this country are distributed as follows:

In cities of 100,000 and over, 18.3 per cent.
In cities of 25,000 to 100,000, 7.5 per cent.
In towns from 2,500 to 25,000, 13.5 per cent.
In hamlets and towns of 2,500 and less, 60.7 per cent.

The census of 1910 states that there were in the United States 29,499,136 children under 15 years of age. There are, then, 17,994,472 children living in small communities, while but 11,504,664 live in towns of over 2,500 inhabitants. So far as medical inspection is concerned, nearly 18,000,000 of the children are being neglected. Realizing this deplorable fact, a few of the more progressive towns are instituting the plan.

The problems which arise in connection with a medical inspection system in a small town, particularly when it be residential rather than industrial in character, are many, and in frequent cases errors have been borrowed from a neighboring big brother and transplanted in the village.

First of all, and this applies to city and village alike, the name and implied junction of "medical inspection" is perhaps the most salient error of all. "Medical inspection" is not enough; "health supervision" is a far better term, and it should cease to be merely an adjunct to our educational system and become an integral part of it.

1. The statistics are taken from the 1913 Handbook of the National Children's Bureau.

The questions which demand the most serious consideration in the small town are: (1) the choice of an inspector; (2) provisions for treatment; (3) stimulation of parental cooperation, and (4) financing.

1. The choice of an inspector is the problem which all small communities face first of all. Led on by pleasing offers of material assistance from industrial life insurance companies, the town may appoint a nurse as health supervisor. Such an arrangement is not complete, and sooner or later its weak points become obvious. A school nurse is a valuable addition to any health supervision system, but alone she is only a makeshift. The ideal system for the small town should be headed by a competent and aggressive physician, whose appointment should be removed from politics and be made solely on merit. His duties are to direct the system, make the actual examination of all pupils, and consult with the superintendent, the teachers and the janitor on matters of health. A well trained nurse, preferably one with school experience, should be a full time employee of the schools, give treatments as recommended by the physician, look after the teeth and heads, and assist at the physical examinations. With such a combination, the detection of contagious diseases is simple. The nurse on her daily rounds through the school discovers suspicious cases and refers them at once to the school physician. From the economical standpoint such a plan delivers more actual benefit than a full time physician alone or a nurse alone. Often it is possible to obtain a really good physician who is willing to give a part of his time to the schools without recompense.

2. Provisions for treatment perhaps offer quite as momentous a problem as does the choice of an inspector, and it is an aspect of the situation which presents itself far more forcefully in the small town than in the city. A small percentage of towns of 5,000 inhabitants have general hospitals; hardly any have free clinics. Of what practical value can a health supervision system be without adequate means for carrying out the treatment recommended? When a nurse is employed in the school she may well give much of the necessary treatment under the direction of a physician, in cases in which the patients are unable to pay for medical attendance. In cases which demand more technical treatment than can be given by a nurse, the problem becomes a real one. In certain instances, tactful letters written to the family physician have brought valuable results. Quite obviously, this will apply in comparatively few cases. It has been found that leaving space on the defect report card,[2] which is sent to the child's home, for the family physician to make a note of his findings and recommendations and returned to the medical inspector in two weeks, has in many places brought most favorable results. The secret of the entire matter, however, lies in the amount of interest and cooperation displayed by the townspeople. This brings us to a consideration of the stimulation of parental cooperation.

3. A personal invitation from the superintendent of schools or the health supervisor to the parents to visit the school and be present at the examination of their children goes far toward bringing the citizens into touch with the system. The law of many states specifies that unless the examination is made by a woman physician, the parents shall be present at the examination of female children. Although this at first seems to be a stumbling block, it is a blessing in disguise, and brings many mothers to the school, most of whom go away impressed by the unquestionable service which health supervision offers.

The public press is a factor of great potentialities in the stimulation of public favor; but it is a deplorable fact that most editors prefer to run a page of worthless short stories and cheap buffoonery which can be bought by the pound, rather than a few terse articles on health. After persistent effort, however, many of them can be made to see the logic of running one column of health notes to every ten columns of fashions, and perhaps, after all, this is as much as we should expect.

The circulation of a health monthly or "healthgram" also spreads the good work, and after a bit it is read by every member of the household. In addition to the short articles by medical men on health topics, little points of advice, a report of prevailing epidemics and absences from school caused by sickness, and short essays on health topics written by the children themselves are of great value in lending that intimate personal note which is so desirable. The use of illustrations and cartoons makes points more lucid and more easily grasped. The bright light of publicity should be turned on the system. All its parts should be explained, and an attentive ear should be turned to all lay suggestions; many are valuable.

Extending health supervision to those districts which are designated as "rural" offers another situation which must be met. These district schools are frequently very remote from the center, and often have only a handful of pupils. It is out of the question to supply complete facilities for proper examination in each of these schools, and a visit to them with a mere cursory inspection often makes a blot on an otherwise admirable record. Instituting a "health day" has been found to meet this problem with an encouraging degree of success. A Saturday in the early fall or spring is chosen, the farmers come in bringing the children, the health supervision system is briefly explained, and the examinations are made. In one community, health day was combined with a meeting of the agricultural extension institute, the farmers quickly saw the parallel between raising better crops and better children, and two highly constructive measures were mutually benefited.

4. The question of expense is as usual a formidable one. In the small community, the administration's officers are not particularly eager to initiate any measure calling for extraordinary expense, endeavoring to keep their budget as low as possible. The only way in which to have health supervision universally adopted is by state legislation, and a beginning in this has fortunately been made. Until it becomes compulsory, however, the small towns will evade the issue. A comparison of expenses in cities and towns, the last being somewhat difficult to obtain, shows that in the cities the expense runs from 25 to 33 per cent. higher. The reasons for this are in the main quite obvious, and an analysis is not necessary. In the small town an appropriation of $2 per child should, with economy, cover the expense of the system after it has made a

2. This card contains the following data:

Date————.

Mr. ———— is found to be suffering from ———— and it is recommended that ———— consult your family physician for advice.

————, Medical Inspector.

I have been consulted by ———— and recommended ———— Date————.

————M.D.

start. Actually this is not high, and it would seem reasonable to believe that this much could be well invested in the coming generation. But when one considers the recent appropriations of a large Eastern state, which included $150,000 for health and $750,000 for fisheries and game, it would seem that that part of the country anyway was going to have better pickerel than children. In the main, however, the health appropriations are nearly large enough, and when economically administered should do much toward improving the next generation of Americans.

FLAGELLATE PROTOZOA AS AN ETIOLOGIC FACTOR OF DYSENTERIC DIARRHEA

REPORT OF A SERIES OF CASES OF TRICHOMONAS DYSENTERY, INCLUDING A LOCAL EPIDEMIC WITH SEVENTEEN DEATHS *

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Until within the last decade, flagellate protozoa, when found in the stool, were considered either incidental or secondary infections of more or less harmless nature. One of us (B. W. R), during seventeen years of laboratory experience, has never found these parasites except in cases with existing or recent acute or chronic diarrhea, and has become convinced that these parasites are of more importance as etiologic factors in diarrhea than has been given them. The *Trichomonas intestinalis* is a pear shaped organism about 17 microns long by 10 wide, with four or more flagella which serve to propel it rapidly about with a quick, jerky motion. These parasites live best in neutral or slightly alkaline mediums, and for this reason any tissue of low vitality may harbor them. As their mode of entrance is by the mouth, however, the gastro-intestinal tract is their usual habitat. The fact that they have been found elsewhere, in our opinion, does not argue against their capacity for assuming primary pathogenic rôles in the bowel, and to support this view we present some selected cases of dysenteric diarrhea in which the sole cause, so far as could be found, was the flagellate protozoa, and in which most of the patients recovered under the recognized treatment for parasitic dysentery.

Whatever their conclusions regarding the pathogenicity of these parasites, most observers give practically the same clinical history: the drinking of impure water followed in a few days by diarrhea with colicky pains, watery or slimy blood stained stools, weakness, dyspnea, loss of weight and progressive anemia simulating pernicious anemia. The skin becomes yellow, with a tendency to urticarial or pellagroid eruptions. The stools contain much mucus, pus, blood and active trichomonads. The blood shows a moderate eosinophilia, from 6 to 12 per cent. The large bowel shows superficial ulcers, the mucous membrane presenting a moth eaten appearance with here and there a diphtheritic exudate. Death may ensue, necropsy showing a cloudy swelling or fatty degeneration of heart, liver and kidneys.

* Read before the Fort Wayne Medical Society, Jan. 18, 1916.

REPORT OF CASES

CASE 1.—The first case of this kind in which we made a definite diagnosis of trichomonad infection was on May 27, 1907, and occurred in the practice of Dr. C. R. Dancer of Fort Wayne, Ind. E. R., aged 35, after drinking foul water developed typical acute dysentery, and had as many as forty-eight stools per day, containing trichomonads, with progressive anemia. Under antiparasitic treatment, complete recovery took place.

AN EPIDEMIC.—In 1909 there occurred an epidemic of dysentery in Liberty Township, Wells County, Ind. Dr. Frank Garrett of Liberty Center had, in all, seventy-eight cases of dysentery with seventeen deaths. "These patients all took sick the same way with marked or excruciating pain in the transverse colon and would be in a condition of extreme shock. There was no fever but the pulse was rapid and feeble. Stools were at first watery, soon followed by blood and mucus. Tenesmus was severe and persistent. Some patients were at the stool continuously, and several of them died on the stool. This would keep up about forty-eight hours, and if the patient survived, under treatment, the dysentery would gradually subside; but the convalescence was long and tedious, and the flux was easily excited by dietary indiscretion or exercise." The treatment consisted of ipecac in large doses combined with calomel. The first patients so treated by these drugs did so well that a large quantity of ipecac was secured, and this treatment was given, not only to the sick, but also to all the healthy people of the community, and the epidemic stopped immediately. No postmortems or laboratory examinations were made, so that the exact cause was not ascertained. We have, however, very good evidence as to the etiologic factor in the fact that a number of cases of chronic diarrhea have since been observed from Liberty Township. All had trichomonad infection as reported below. Cases 2 and 6 especially being connected directly with this epidemic. Both of these patients were stricken with the epidemic from which a chronic dysentery developed that came under our observation last year.

CASE 2.—Mrs. J. S., aged 53, with negative family and personal history, consulted Dr. F. A. Metts, Bluffton, Wells County, Ind., in June, 1915. Sixteen years ago during the epidemic she had a severe attack of dysentery, and was about six months getting over the acute attack. She had had a number of acute attacks since, with constant feeling of fulness in the rectal region. She passed much blood stained glairy mucus. She had severe headache, was quite melancholy, and was gradually losing weight. She would sit for parts of days in a sort of stupor. About four years ago she noticed an eruption over the backs of both hands, and on the right side of the neck and right malar eminence, at which time the mental symptoms first appeared.

The patient was a small, poorly nourished woman, 5 feet 2 inches, weight 103 pounds, pulse 100, and temperature 97. There was considerable tenderness over the region of the sigmoid and the whole of the colon. The reflexes were slow, the patient experienced considerable difficulty in speech, seemed in a daze and could not answer questions satisfactorily. Proctoscopic examination revealed a large shallow ulcer in the posterior wall of the rectum, and the rest of the rectum was covered with considerable mucus and was much congested. Examination of the stool revealed blood, mucus, pus and many active trichomonads.

Emetin hydrochlorid, 1 grain daily for one week, was given, the bowel was flushed with normal salt solution, and the ulcerated area painted with 5 per cent. argyrol. Improvement occurred immediately. After one week the bowel was flushed every other day with 1 per cent. hexamethylenamin solution, and 120 grains of thymol were administered in two doses, three days apart. Following this, the patient was put on weekly flushings with petroleum and given a preparation of ipecac, to be taken continuously with intervals of rest. The patient gained 25 pounds in weight, her mentality returned to normal, the skin lesions and diarrhea disappeared, and she now seems fully recovered.

CASE 3 occurred in the practice of Dr. L. H. Cook, Bluffton, Wells County, Ind. Nondes L., aged 11, living at Warren, 3 miles from the township line of Liberty Township, in December, 1913, was taken with bloody diarrhea with some pain and slight fever. There were from fifteen to twenty bowel movements a day, with loss of weight and exhaustion. In February, 1914, the stools were examined and an active monad infection found. (These monads remained alive at room temperature for five days in the laboratory, showing the extreme vitality of the Liberty Township parasite.) Under emetin treatment the monads disappeared and the diarrhea stopped.

CASE 4.—In February, 1913, a diarrheal stool sent from a patient in Liberty Township showed many monads. No history was obtained.

CASE 5.—Another patient, now living in Bluffton, but from Liberty Township, had bloody diarrhea. The stool showed monads, pus and blood. Blood examination showed 5 per cent. eosinophils. No history was obtained.

CASE 6.—E. M. R., man, aged 71, residing at Liberty Center, in practice of Dr. F. A. Metts of Bluffton, was in good health until sixteen years ago. At Liberty Center he was taken with the dysentery which was scouring the community. He was ill six weeks, and convalesced slowly. Acute dysentery left a chronic diarrhea. Since then he has had a series of acute attacks of short duration following dietary indiscretion. In February, 1915, while attending the state legislature he was again taken with an attack of dysentery confining him to his hotel for two weeks. The bowels moved every ten or fifteen minutes during the first forty-eight hours. In March he was able to be brought home on a cot, much exhausted. The bowels were somewhat better, but a marked neuritis developed in the left sciatic nerve and its branches. A skin manifestation appeared in the form of an erythema on the nose with vesicles on each side. An erythematous spot also appeared in front of the trapezius and along the sternomastoid on the left side, with a few vesicles. Both hands were bright red, with numerous vesicles, and had to be bandaged. The left ankle also showed an eruption.

The patient was well nourished, the chest was negative, pulse from 80 to 92, blood pressure 130, and occasionally there was a little fever. Rectal examination revealed shallow ulcers high up with a white flaky (diphtheritic) looking exudate. Blood showed 6 per cent. eosinophilia. Examination of feces, May 25, 1915, showed a trace of blood, and many active monads. Emetin hydrochlorid, ½ grain, was administered every day for a week, and the dose was gradually increased until, on the last three days, the patient took 1½ grains each day. June 3 the feces contained no blood and only a few monads (1 per field). All the symptoms were greatly improved, and the erythema, including that on the nose faded. The hands had improved to such an extent that scaling, which took place, was nearly complete. The second week the emetin was discontinued, and daily enemas of 3 pints of petroleum given, at the end of which time the skin was clear, the redness of the nose all gone, the hands perfectly clean and the diarrhea much better. Petroleum enemas were continued and a tonic given internally. The patient improved rapidly and began taking drives. May 30 he was out all day driving, was caught in a storm, got wet and was thoroughly chilled. There was complete anuria for twenty-four hours followed with death. Postmortem was refused. There had been no sign of renal insufficiency before.

CASE 7.—E. B. W., Bluffton, Ind., had acute dysentery with recovery. Six months later he developed melancholia with headache. The Wassermann reaction was negative, eosinophils, 23 per cent. The feces contained monads. Under salol and emetin, the nervous symptoms and eosinophilia disappeared.

These cases are reported to call attention, first, to the incidence of a local epidemic and endemic, and second, to a not infrequent cause of acute or chronic diarrhea. That these cases are not extremely rare, we are convinced, for within the last year, in routine examination of all cases of diarrhea in the practice of Dr. L. P. Drayer of Fort Wayne, six cases of trichomonas infection were found, all of which responded to ipecac treatment.

ACUTE SYPHILITIC NEPHRITIS, FROM THE STANDPOINT OF DIAGNOSIS AND SALVARSAN TREATMENT

WITH REPORT OF A CASE

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While the elaborate studies of Karvonen and of Munk, on the continent, have contributed materially to the clinical delineation of the picture of the acute nephritis of syphilis, the condition, although known to exist, has received, in the American literature at least, a minimum attention. The recent work of Stengel and Austin[1] is the principal exception. Osler and Churchman, for example, concede that the subject has been widely overlooked and has had too little study.

Acute syphilitic nephritis (nephritis acuta syphilitica praecox of Hoffmann), as distinguished from slight transient albuminuria, is a relatively uncommon complication of syphilis. Karvonen,[2] in an examination of ninety-two reported cases, could accept only twenty as authentic examples. Fournier[3] collected twenty-six instances from his experience, Hoffmann[4] had seen only six cases up to 1913, and Audrey[5] reported two cases, one of which illustrates the preroseolar type, occurring before the outbreak of secondary manifestations in the skin. Munk[6] collected data of fourteen cases in Kraus' clinic (Berlin) in three years. With the newer diagnostic criteria it seems probable that it will be more frequently recognized. The following case in my practice may serve as an illustration of both the diagnostic and therapeutic difficulties which may present themselves.

REPORT OF CASE

History.—J. S., laborer, aged 25, of negative family and past history and good habits, came under my care with a syphilitic infection of five months' duration for which he had already received three injections of neosalvarsan and twelve inunctions. The Wassermann reaction was strongly positive, the urine negative, and the general health was little affected except for some loss in weight. There were no active lesions other than slight pharyngitis. Following the ninth of a series of mercury salicylate injections, in a dosage of from ½ to 2 grains weekly, during which the urine was negative, the patient reported having suddenly been taken sick, with severe swelling of the face and general malaise. When seen, four days after onset, there was still some edema of the face and a distinct pallor. There was slight edema over the tibiae. The urine was acid, the specific gravity was 1.020, there were large numbers of granular casts and a few red cells, and albumin (not accurately measured) was very heavy. The urine of other patients receiving the same course of treatment with the same emulsion was normal.

Treatment and Course.—The patient refused to consider inpatient treatment, since he felt comparatively well. No twenty-four hour specimen could be obtained, and the case

1. Stengel and Austin: Am. Jour. Med. Sc., 1915, cxlix, 12.
2. Karvonen: Dermat. Ztschr., 1900, vii.
3. Fournier: Traité de la syphilis, Paris, 1906, i, part 1, p. 734.
4. Hoffmann: Deutsch. med. Wchnschr., 1913, xxxix, 353.
5. Audrey: Ann. de dermat. et de syph., 1912, Series 5, iii, 277.
6. Munk: Ztschr. f. inn. Med., lxxviii, Nos. 1 and 2.

had to be studied under ambulatory conditions, with the patient at work. Still suspecting a mercurial origin for the nephritis, I gave the patient a three weeks' rest, during which the urine, at first stationary, gradually grew worse, until a daytime specimen would almost coagulate on heating, the sediment containing innumerable casts and a few red cells. Mercurial inunctions of 6 gm. were resumed, which improved the patient in a week and reduced albumin to a trace in three weeks. A low protein salt free diet was prescribed. In the fourth week, in spite of inunctions, heavy exertion apparently increased the albumin almost to the original point. Pharyngeal symptoms were more marked, and patchy alopecia appeared. Mercury salicylate, 1 grain, intramuscularly, and a week of rest, cleared the urine of casts and all but a trace of albumin. Rest in bed in a hospital, apparently without mercurial treatment, the following week, resulted in a complete relapse, and the patient was not benefited by an injection of mercury salicylate when seen again.

Thus far the case illustrates both the efficiency of mercury and the value of rest, and the insufficiency of either without the other. The syphilitic origin of the condition being now fairly clear from the therapeutic test, the patient was with some hesitation given 0.13 gm. of salvarsan intravenously. Albumin before injection showed a heavy coagulum. Twenty-four hours after injection, there was barely a trace. No unfavorable reaction occurred. The patient disappeared from observation for three weeks (no treatment), and returned with a complete relapse, with weakness and loss of weight. A second injection of salvarsan, 0.2 gm. intravenously, was given. The urine was found to be practically negative a week after injection. After a third injection of salvarsan, 0.3 gm., the patient again disappeared from observation for three weeks. When seen again, he was in worse condition than at any previous time. There were marked loss in weight, furuncles on the back and extremities, and a urine suggesting that of an eclamptic. Neosalvarsan, 0.4 gm., resulted in a practically normal urine on the third day, with a considerable improvement in general condition and the rapid disappearance of the furuncles. No more salvarsan being obtainable at the time, and the patient objecting to rubs on account of the excessive hairiness of the body, mercury salicylate injections were resumed. A weekly dosage of 1 grain was insufficient to prevent the reappearance of albumin, which disappeared, however, when the dose was raised to 1½ grains. Under this dose the urine remained clear for four weeks, when albumin again appeared. On the supposition that the dose was becoming insufficient, it was increased. Slight sponginess of the gums led to a suspension with the urine still showing a marked trace of albumin. This disappeared under two weeks' rest. The origin of this albuminuria was presumably mercurial, and indicated the very narrow margin existing between the effective therapeutic and the toxic or injurious dose. The patient has since received five injections of arsenobenzol intravenously in doses ranging from 0.3 to 0.5 gm. without symptoms of intolerance. The urine before the fourth injection showed no albumin. One hyaline cast was seen. With a polarization microscope I was able to detect several clumps of double-refracting globules, which, however, were not present in the sediment after a fifth injection. A moderately positive Wassermann reaction at the end of the mercurial series became a very strong positive at the end of the five injections of arsenobenzol.

COMMENT

The clinical picture of acute syphilitic nephritis, as will be apparent from the example described above, is none too sharply defined, and can profitably be reviewed for the purpose of bringing out the distinctive points.

Onset.—Fournier emphasized the extremely early onset from the standpoint of the stage of the disease. Eleven of his twenty-six cases appeared in the second month of the infection. Audrey has reported a case developing before the outbreak of cutaneous secondary manifestations. My case began in the fifth month, which Phillips (MacDonald's case[7]) considers the average period of onset for this form of nephritis. The onset may be either abrupt or insidious, but is usually the latter. Eleven of Munk's fourteen patients showed progressive weakness with severe anemia, and complained especially of edema and weakness. Isaac[8] gave loss of weight as the most striking objective symptom in his experience. Edema, often the first distinctive clinical sign, may be extreme, with hydropic accumulations in the pleural and peritoneal cavities (Hoffmann, Fournier, MacDonald). Blood pressure in MacDonald's case was not much increased. The slight constitutional disturbance, considering the severity of the renal involvement, is remarkable, and was well illustrated in my case. Fournier emphasized a marked tendency to uremia, and described a fulminating type with rapidly fatal termination. Hoffmann, on the other hand, has never seen the complication, and Karnoven's review led him to believe that Fournier had exaggerated the danger. Abrupt onset, moderate but transient edema, marked loss of weight and weakness when the condition was at its height, but a surprising lack of more serious impairment of the general health, were the main clinical features of the present case.

Urinary Findings.—Fournier noted their resemblance to those of other forms of acute nephritis. According to Munk, there is usually oliguria (from 300 to 1,200 c.c.), color usually normal rather than smoky, specific gravity high, reaction acid. The albumin content reaches extraordinary figures, and is almost distinctive in itself. Hoffmann has seen from 3 to 13 per cent.; MacDonald's case showed at outset, one-half volume, later one-fourth and one-sixth. Hoffmann, Fournier, Isaac and others have repeatedly seen the urine coagulate on heating to the point at which it could not be poured from the tube, a finding approached at one time in my case. The sediment contains a few red cells and white cells, the latter occasionally in excess, as in the type of syphilitic nephritis occurring in congenitally syphilitic infants (Karvonen, Hahn[9]). There may be much epithelium, and usually many lipoid or fatty casts, with a few hyaline and granular casts. According to Munk, the lipoid casts are usually classed as granular by the average observer, since their true character is best seen only on examination with the polarizing microscope. Clumps of lipoid droplets are numerous at the height of the process.

Two recent findings are of importance from the standpoint of differential diagnosis. Munk proposed the presence of double-refractive lipoids in the urine as a means of differentiating inflammatory from degenerative nephritides, and in particular for the recognition of syphilitic nephritis. Stengel and Austin,[1] in a recent study, found that in twenty-three cases of nephritis with large amounts of albumin and casts, six cases with positive Wassermanns all showed double refractive lipoids in the urine, while of fourteen non-syphilitics only five showed lipoids in the urine, a finding which suggests that the criterion is scarcely absolute. Munk has found double-refracting lipoids in the urine of syphilitics without nephritis, over long periods of time, and also in the urine of tabetics and paretics. The recognition of double-refractive objects in

7. MacDonald: Lancet, London, 1915, ii, No. 4804.
8. Munk: Dermat. Ztschr., 1914, xxi, 591; discussed by Lesser, Tomaszewski, Isaac, Heller et al., ibid., p. 522.
9. Hahn: Deutsch. med. Wchnschr., 1912, xxxviii, 759.

a microscopic field necessitates the use of special equipment in the form of a pair of Nicol prisms, which limits the availability of the method. By polarized light all objects in the field which are not doubly refractive disappear, leaving only the crystals and double refractive lipoids visible against a dark background.[10]

The second finding reported by Hoffmann, who also cites Dryer and Toepel, is the presence of living *Spirochaetae pallidae* in the sediment of the last portion of the urine in one of his cases. This specimen, although taken after special precaution to prevent external contamination, was not catheter-drawn, a precaution which Hoffmann thinks necessary since the organisms may come from lesions within the urethral canal. The status of this observation is still unsettled. It should receive the attention of others with a view to determining its correctness, but has apparently been overlooked, as it was by me.

Diagnosis.—This centers about: (1) the recognition of syphilis in the patient; (2) the identification of the nephritis as due to syphilis and not simply a parenchymatous nephritis occurring in the course of syphilis, and (3) differentiation of the nephritis from one due to treatment.

On the first point, certain special details are brought out by the literature. The Wassermann examination is of great value. The history is entirely untrustworthy, since the nephritis may follow an inconspicuous or concealed primary lesion (as in women), and precede all eruptive phenomena, which may be mild even when present. Hoffmann calls attention to the completeness with which the edema, when marked, may mask the clinical signs of syphilis on the skin and mucous membranes. Suspicious lesions should be examined for the *Spirochaeta pallida* by dark field.

On the second point, the negative evidence of a lack of other adequate reason for the nephritis should arouse suspicion (Fournier). The possibility should therefore be investigated in every obscure case of nephritis. The examination of the sediment for double-refracting lipoids and for the *Spirochaeta pallida* should be carried out if possible. A therapeutic test is of the greatest importance, and will be discussed more fully under treatment. Munk rates it as the most valuable single aid after the newer laboratory diagnostic criteria. Its availability places it first for the average case, and it proved to be the main reliance in my case. The often enormous albumin content is highly suggestive of syphilitic origin, according to Fournier, Hoffmann, Lesser, Isaac and others. In less extreme cases, the value of this criterion is correspondingly reduced.

As regards the third point, the fact that vigorous treatment with mercury, as indicated by the present case, is not sufficient to prevent the onset of nephritis of syphilitic origin may make the problem of differentiating a mercurial and a syphilitic nephritis a difficult one. If the urine has been systematically examined during the mercurial course, the characteristic features of onset of a mercurial nephritis, that is, diuresis and cylindruria, as pointed out by Hoffmann, Welander and others, can usually be recognized before the albuminuria reaches the point at which confusion with a true syphilitic nephritis is liable to occur. Suspension of the mercurial treatment will usually cause a mercurial nephritis to subside, even though it does not disappear at once. If the patient improves on the suspension of mercurial treatment, the instrumentality of syphilis may be doubted but not entirely excluded. Only a culpable neglect of precaution in the administration of mercury can allow a mercurial nephritis to reach such an extreme degree that these differences disappear. The substitution of salvarsan for mercury, as pointed out later, is an easily available means of establishing the syphilitic character of an albuminuria, when previous mercurialization has confused the picture. Examination for the characteristic double-refracting lipoids, when available, is of course of great assistance.

Treatment.—The general management of a case of acute syphilitic nephritis has followed the principles applicable in the more familiar forms. The French school insists on the milk regimen. Munk, however, while conceding the value of a restriction of proteins and salt, emphasizes the fact that no regimen is acceptable which does not maintain and raise the general nutrition and strength of the patient. For this reason he opposes too much reduction of meats especially. A bland but rather liberal diet seems to be better than one which does not compensate for the rapid loss in weight so common in these cases.

The efficacy of antisyphilitic treatment and the necessity for its prompt application was well established by Fournier. The use of mercury usually produces a striking improvement. Lesser[8] has seen the albumin disappear on an average in from eight to fourteen days under vigorous inunctions. Hoffmann commends the inunction as the method of election in administering mercury, beginning with 2 gm., which is half the usual dose. Munk advocates intramuscular injections in severe cases, followed by inunctions when the acute phase is under control. Osler and Churchman[11] believe that mercury should be used entirely until the disappearance of albumin. Welander, Karvonen and others emphasize the importance of mercurial therapy, and Karvonen doubted the correctness of the diagnosis in all cases in which the patients did not improve under it, but got better when it was stopped.

On the other hand, the value of mercury is not to be accepted without reservation. Billings[12] felt that cases were often distinctly aggravated by mercury and the iodids. Munk has seen both the albuminuria and cylindruria increase at the outset of mercurial treatment, and Heller[8] emphasizes the ease with which a mercurial nephritis can be excited in these cases by an overzealous therapy. MacDonald found that his patient improved for a time very markedly under mouth administration and inunctions, but later became resistant. My own experience in the present case, while showing the value of mercury, illustrated the slowness of its action compared with that of salvarsan, and its inability to prevent the onset of the complication in the first place. It also bore out Heller's point, to which reference has been made. A dosage of less than 1 grain of the salicylate was insufficient to keep the situation under control, and yet a moderate increase (to 1½ grains) quickly gave rise to enough accumulation to cause irritation. The margin of safety was therefore distinctly a narrow one.

10. For a good illustration of such a field, see Munk: Ztschr. f. inn. Med., 1913, lxxviii, 19.

11. Osler and Churchman, in Osler and McCrae: Modern Medicine, ii, 179, 211.

12. Billings, Frank: Visceral Syphilis, THE JOURNAL A. M. A., Nov. 18, 1911, p. 1655.

The critical estimation of the value of salvarsan in the treatment of the acute nephritis of syphilis is still hampered by the scarcity of reports on its use in these unusual cases. The effect of the studies of Wechselmann[13] and his co-workers in emphasizing the possibility of renal irritation from salvarsan and from combined therapy, together with reported cases of hemorrhagic nephritis and anuria after salvarsan administration, such as those of Justi,[14] Nanta[15] and others, have tended in the past to discourage resort to it in the face of renal complications. More recently, however, large groups of cases have been reported, such as those of Lier[16] (Ehrmann's clinic, 3,000 injections) and Nicholas and Moutot[17] (Lyons, 9,000 injections), in which albuminuria in itself was not accepted as a positive contraindication to salvarsan, but merely as an indication for low initial dosage. The successful results indicate that the objections to salvarsan on the score of renal injury have been exaggerated. Nicholas and Moutot found that a number of these patients, who tolerated mercury very poorly, were not affected by salvarsan, beyond an occasional transient increase in albumin such as is frequent under mercury. Two cases of old postscarlatinal nephritis, under treatment for syphilis, seemed actually to improve after four injections. In an experience of nearly 3,000 injections under inpatient observation with special examination of the urine after salvarsan, I myself have never seen an albuminuria result from it, and have seen two cases of hematuria in the course of syphilis (gumma of the kidney?) clear up promptly under it. I have seen it well tolerated in cases of chronic interstitial nephritis without cardiac complications. There can be little doubt that the type of case reported by Nanta, for example, illustrates the damaging effect of too high initial dosage, in his case being as high as 0.6 gm. salvarsan. In Audrey's two cases of acute syphilitic nephritis, the transient increase in albumin and the delayed effect seem attributable to renal irritation from such doses as 0.4 and 0.5 gm. salvarsan at the initial injection. Since Riebes,[18] Katz[19] and others have demonstrated that the spirocheticidal effect of salvarsan, at least, is as striking with 0.3 gm. as with 0.6 gm., the justification for the larger doses in the treatment of syphilitic nephritis seems to have vanished.

The exceptionally favorable effect of salvarsan in these cases has been noted by a number of continental observers, but has had less attention in this country. Hoffmann, while considering combined treatment essential, believes that salvarsan is superior to mercury and should be used first when special caution is needed to avoid renal injury, and that it has greatly improved the prognosis of the condition. Munk found it to be well tolerated in his series, and Audrey employed it successfully, though in rather large doses. Both the first-named authors consider 0.2 gm. a satisfactory initial dose, although in my experience a much smaller dose was effective (0.13 gm.). The dose may be safely increased to 0.4 gm. after the albumin disappears. A total dosage of 2 gm. is recommended by Hoffmann, with from 160 to 200 gm. of mercurial ointment in the form of inunctions.

13. Wechselmann: Abstr., Urol. and Cutan. Rev., 1913, xvii. Wechselmann and Loewy: Berl. klin. Wchnschr., July 21, 1913.
14. Justi: Therap. Monatsh., xxvi, No. 4.
15. Nanta: Ann. d. mal. vén., 1914, ix, 352.
16. Lier: München. med. Wchnschr., 1914, lxi, 2233.
17. Nicholas and Moutot: Annal. de dermat. et de syph., 1914, p. 391.
18. Riebes: Arch. f. Dermat. u. Syph., 1913, cxviii, 757.
19. Katz: München. med. Wchnschr., 1913, lx, 2337.

While I concede the necessity for combined treatment as a general measure, my experience with the case here reported is distinctly in favor of salvarsan or arsenobenzol as compared with mercury in the control of the condition. Not only did the nephritis respond with a promptness which should limit the damage to the kidney to the least possible amount, but also the patient's gain in weight and general improvement was much more marked than under mercury. The extremely small dose necessary to produce a marked change in the urinary findings suggests further the saving of time which salvarsan can effect in making a therapeutic test, while remaining well within limits which experience is showing to be entirely safe for any other form of nephritis likely to be confused with the acute syphilitic form. The drug may claim superiority over mercury on the score of minimum renal irritation, if a safe dosage be adhered to. The margin of safety consistent with a definite therapeutic effect is certainly very much greater with salvarsan than with mercury. On the other hand, the effect of salvarsan in the doses used seemed more transient than that of mercury, probably in part because of the storage effect of intramuscular injection in the latter case. Combined treatment would seem essential if satisfactory long-run results are to be obtained.

SUMMARY

1. Syphilis as a causative factor in acute nephritis is easily overlooked or its significance not appreciated.

2. The complication may develop in the course of efficient mercurial treatment (intramuscular injections).

3. The best recognized points in diagnosis are: (*a*) establishment of the existence of early syphilis; (*b*) high albumin content; (*c*) double-refractive lipoids in the urine; (*d*) therapeutic tests. Of these, *c* and *d* are probably the most reliable, and *a*, *b* and *d* the most available.

4. *Spirochaeta pallida* should be searched for in the sediment of a catheterized specimen on the recommendation of Hoffmann.

5. The diagnosis in the present case was established by points *a*, *b* and *d*, and later *c*. Of these the therapeutic test rendered the best service, because of its availability.

6. The administration of salvarsan is a valuable aid in the diagnosis and treatment of acute syphilitic nephritis.

7. The risk in administering salvarsan in proper doses to a nephritic suspected of being syphilitic, to establish a diagnosis, is no greater and perhaps less than that incurred by using a sufficient dosage of mercury.

8. The effect of salvarsan is much more prompt, but in small doses, less lasting than that of mercury in average doses.

9. The general therapeutic response is probably better with salvarsan than with mercury.

10. Renal injury from salvarsan seems to be the result of overdosage, either in the form of too large or too frequent injections.

11. The place for mercury would seem to be after the disappearance of the albumin, to secure permanent results.

12. Small doses of salvarsan, from 0.15 to 0.2 gm. or its equivalent, at weekly intervals, are adequate, and must not be exceeded at the outset, but may be cautiously increased to 0.4 gm. later.

THE DIPHTHERIA TOXIN SKIN REACTION

A SIMPLE METHOD OF ITS APPLICATION *

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The great advantages gained by a prompt recognition of individual susceptibility or immunity to diphtheria are beyond dispute. The principles underlying the methods by means of which this information is gained have long been known. The actual technic of these methods has been repeatedly changed and simplified.

Römer injected intradermally into a guinea-pig a definite minute amount of diphtheria toxin mixed with a definite amount of the serum which was to be tested for antitoxin. If the tested serum did not contain an amount of antitoxin sufficient to neutralize the amount of toxin injected, necrosis occurred. This method was far too complicated for ordinary clinical purposes.

In 1909, Schick published a more practical technic. One fiftieth of the minimal lethal dose (for a 250 gm. guinea-pig) of diphtheria toxin diluted in normal saline solution is injected intradermally into the patient's forearm. This method requires accurate measuring of the toxin and the saline. It requires a pipet, a graduate, a syringe and saline solution, all of which must be sterile.

Recently Park and Zingher have improved this method. The toxin is furnished in capillary tubes each containing one minimal lethal dose. The contents of a single tube are mixed with 10 c.c. of sterile saline solution. By injecting 0.2 c.c. of this solution, one injects one fiftieth of the minimal lethal dose Although this technic is simpler than the one described by Schick, it is still too cumbersome.

Needle for the intradermal introduction of diphtheria toxin, actual size, correct angle.

Our investigations showed that if the toxin injected approximated one fiftieth of the minimal lethal dose rather than accurately equaled that amount, all the indications of the test were met. We therefore devised a needle for this purpose. The technic of our method is as follows: After an area of skin on the forearm has been cleansed with alcohol, the latter is encircled by the thumb and index finger, and the skin held tense between them. The needle is dipped into the bottle of pure undiluted diphtheria toxin[1] and then *immediately* inserted *intradermally*. It is important that the needle be inserted intradermally and not subcutaneously. The needle is an ordinary hypodermic bent at a distance of one-quarter inch from its point so as to make an angle of about 170 degrees. The angle aids in inserting the needle intradermally. From the place of bending to the distal end it is shielded so that only the unshielded one-quarter inch can be inserted into the skin. The needle is so constructed that when it is inserted its full length the amount of toxin carried in is approximately one fiftieth of the minimal lethal dose. We have had the needle weighed before and after dipping it into the toxin, and the difference was found to be 0.0001 gm., which was the ultimate possibility of weighing of the scales used.

There can be nothing simpler than this technic. It is practically painless. It obviates diluting the toxin, thereby eliminating the paraphernalia needed for this purpose. The pure toxin kept on ice retains its potency for one year. The diluted toxin used in the Schick technic deteriorates in twenty-four hours. Another very important advantage is the reduction of pseudoreactions to a minimum. This question, however, will be considered later.

In all the cases tested the original Schick technic was used as a control on the right arm, while the technic described was used on the left. The tests were studied twenty-four, forty-eight and seventy-two hours after the injection. The results were as follows:

1. Every case positive by the Schick technic was positive by ours.

2. Every case negative by the Schick technic was negative by ours.

3. The traumatic pseudopositive reactions, which appear to be positive by the Schick technic although really negative, were negative by ours. Thus one source of error is *entirely* eliminated.

4. Of the anaphylactic pseudopositive reactions, which appear to be positive by the Schick technic although really negative, 75 per cent. were eliminated.

By Schick's method, if the patient's blood contains less than 0.031 unit of antitoxin per cubic centimeter, a positive reaction occurs in from twenty-four to forty-eight hours. Such a reaction signifies the absence of a sufficient amount of antitoxin to protect the patient from clinical diphtheria. "The reaction is characterized by a circumscribed area of redness and slight infiltration which measures from 1 to 2 cm. in diameter. It persists for seven to ten days, and on fading shows a superficial scaling and a persistent brownish pigmentation." This description is applicable to the reaction obtained by our technic with but one exception. Our reaction is smaller, measuring from 0.6 to 1.3 cm. in diameter.

The traumatic pseudopositive reactions obtained with the Schick technic are seen after twenty-four hours, but rapidly fade. A few persist until seventy-two hours after the injection. The outline of the reaction is usually poorly defined, and as a rule there is a definite infiltration at the site of the injection. If during an epidemic, a final reading must be made twenty-four hours after the injection, such a reaction cannot with assurance be differentiated from a positive one. The traumatic pseudopositive reaction is caused by the trauma produced by injecting intradermally *0.2 c.c. of the diluted* toxin and not to the toxin itself. Kolmer and Moshage[2] found that the injection of 0.2 c.c. of fluid produced 8 per cent. more traumatic reactions than when 0.05 c.c. was injected, even though both doses contained the same amounts of protein constituents and preservatives. Inasmuch as by our method a needle is merely pierced intradermally and no measurable volume of fluid (about 0.00014 c.c.) is injected, this useless and misleading reaction is entirely eliminated.

The anaphylactic pseudopositive reaction obtained by the Schick technic was first described by Park and

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1. The minimal lethal dose of the toxin used was 0.007 c.c. We are indebted to Drs. Park and Zingher of the Research Laboratory of the New York City Department of Health for kindly furnishing us with the toxin.

2. Kolmer, J. A., and Moshage, Emily L.: A Note on the Occurrence of Pseudoreactions on the Skin, THE JOURNAL A. M. A., July 10, 1915, p. 144.

Zingher. "It appears earlier, is more infiltrated and less sharply circumscribed" than the true positive reaction. It usually disappears in from three to four days, leaving "only a faintly pigmented area" which soon becomes invisible and "is not followed by true scaling." This form of pseudopositive reaction, according to Park, Zingher and Serota,[3] is "probably a local sensitization phenomenon of a general protein character."

Of the first 106 cases tested by us, four showed an anaphylactic pseudopositive reaction by the Schick technic, while only one responded this way by our method. Inasmuch as the total number of such reactions, in very large series, is only about 8 per cent. one must have performed thousands of tests before a sufficient number of these reactions are obtained to draw definite general conclusions. At any rate, our present experience is that about 75 per cent. of all anaphylactic pseudopositive reactions are obviated by our method. Since in both methods, theoretically, 0.00014 c.c. of toxin is used, one would expect an equal number of reactions due to the protein constituents of the bouillon. Actually, as we have stated, this did not occur. This would seem to show that all the *so-called* anaphylactic pseudopositive reactions are not due *solely* to the protein constituents of the bouillon, but that a coexistent trauma plays an important rôle.

The simplicity of the technic we have described, the elimination of the traumatic pseudopositive reactions, and the reduction of the number of anaphylactic pseudopositive reactions enhance the value of an already invaluable test.

REINFECTION IN SYPHILIS

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Since the introduction of salvarsan, many cases of a second infection with syphilis have been reported, more especially in Europe; but while cases undoubtedly have occurred in this country, not many have been carefully studied and reported. Such a case occurred recently in my private practice, and as I had the opportunity to see and treat both infections, I feel it of enough value to report.

A traveling man, aged 36, came to see me first, Nov. 6, 1911. He had a large, very typical sclerosa on the right side of the coronary sulcus, and a beginning right inguinal adenopathy. He had been exposed some weeks previously, and had been treating with his family physician. November 7, he received 0.9 gm. salvarsan intravenously. From November 16 to December 25 he received seven injections of mercury salicylate; being out of town part of the time, he did not get these regularly. A rest was given, and Feb. 22, 1912, the Wassermann test was positive. During the remainder of 1912 he took two courses of mercury rubs—sixty in all—and also about 120 c.c. of potassium iodid. Dec. 16, 1912, the Wassermann test was negative. Fearing that he would disappear, I urged him to take more treatment. Dec. 21, 1912, he received 0.9 gm. neosalvarsan, and early in 1913 took three injections of mercury salicylate, and later in the year a course of rubs.

I next saw him Jan. 28, 1916. Thirty days before he had been exposed, and in three weeks a small sore appeared on the foreskin. Becoming suspicious on account of his previous experience, he finally came to see me. I found a typical sclerosa on the top part of the foreskin, which looked to be about a week or so old. Numerous spirochetes were found, and the Wassermann test was negative. A slight enlargement of the inguinal glands could be made out.

I immediately put the patient on neosalvarsan, and the sclerosa is at present, February 15, just about healed.

This case shows that syphilis can be cured at times with what I should call a very small amount of treatment. I usually give at least twelve treatments with neosalvarsan, and treat with hypodermics of mercury for two or three years.

I am certain that the second lesion was a reinfection because it was in a different location from the first — barring out chancre redux — and the finding of numerous spirochetes together with the negative Wassermann make me absolutely sure of it. Between the two infections he was the father of two healthy children.

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3. Park, Zingher and Serota: Arch. Pediat., 1914, xxxi, 489.

A SIMPLE METHOD OF DRAINING EMPYEMA

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It is probable that this little technical device, which I believe of advantage in draining the chest, has been described before. If so, it has escaped my attention, and since a number of surgeons who have seen it used in my clinic have found it new, I take the liberty of describing it:

It is a method of preventing the ingress of air in cases in which drainage of the chest is made necessary, and at the same time by negative pressure it tends to diminish any pneumothorax that may be present. As drainage is usually established, there is ample opportunity for the escape of the purulent effusion from within, but there is no way of preventing the entrance of air through the tube, unless the siphon method is adopted by inserting the end of a long tube in some antiseptic solution in a receptacle placed by the side of the patient. Such, for example is the method of Bulau, modified recently by Holt.[1] Bryant[2] described what appears a very complicated method of aspiration drainage in which he used a collapsible rubber Politzer bag, with thumb screw and valve.

Unless some such method is adopted to prevent the inrush of air, the noise which attends the suction may be most distracting to the patient and attendants for two or three days after the operation. Furthermore, the ingress of air through the drainage tube is detrimental to the furtherance of the lung expansion, which is so essential a factor in the definitive cure of empyema. Both of these factors are cared for in the following manner:

An ordinary drainage tube is slipped into a collapsible soft rubber tube, which must fit accurately about the harder one for a distance of 1 inch or more. The soft tube is that ordinarily employed for cigaret drainage. When the harder tube is accurately fitted into the wound, any effort at inspiration will cause the soft outer tube to collapse and prevent the ingress of air. On the other hand, the pressure of the lung from within, with the normal respiratory movement, will be sufficient to open the collapsible tube and permit the escape of whatever pus may be within the chest.

1. Holt: Am. Med., 1913, p. 381.
2. Bryant, J. D.: Surg., Gynec. and Obst., 1906, p. 298.

While the drainage is profuse, the collapsible tube can be led into a bottle, which may be changed as often as is necessary. With the decrease of the discharge, the bottle can be dispensed with and the discharge guided into the dressings. It is almost needless to say that the inner drainage tube must be made to fit air tight into the wound in the intercostal space, whether or not a rib resection has been done. A suture or two through the wound margin and the proximal tube will prevent the latter from slipping into the thorax.

If it seems desirable at any time to apply suction through the tube either for the removal of retained pus or to aid lung expansion, a glass tube fitted to a Potain aspirator can easily be slipped through the collapsible tube into the firmer one without the danger of admitting air.

19 West Seventh Street.

VOLVULUS OF MECKEL'S DIVERTICULUM

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The importance of Meckel's diverticulum as a pathologic agent may be gathered from the facts that this congenital condition is present in some form in 2 per cent. of individuals; that it is a rather common cause of intestinal obstruction, being the causative factor in 6 per cent. of the cases in an analysis of nearly 1,000 cases of intestinal obstruction by Halstead, and that it not infrequently becomes inflamed, and when inflamed so closely resembles appendicitis in its symptomatology that a perfectly harmless appendix may be removed and the real offender be left behind. Todd reports three such cases. Finally, it gives a mortality of 50 per cent. in all cases, which strongly suggests that we do not recognize the condition early enough for proper and effective treatment.

REPORT OF CASE

History.—B. M., man, aged 20, laborer, referred by Drs. Yarbrough and Mooty of Columbia, Ala., Feb. 13, 1916, with a negative family history, had had measles and pneumonia in childhood. For the past two years he had had occasional attacks of colic of brief duration, never severe enough to compel him to quit work. One month prior to the present illness he had severe colicky pains in the abdomen, lasting all night. He vomited for two or three hours. He was all right the next day except for a sense of tenderness in the abdomen which persisted for three or four days. The present attack began forty-eight hours previously with severe colicky abdominal pains. The pain was intermittent, quite severe, "doubling up" the patient, and rather general at first, but now localized to the right of the umbilicus. He had vomited almost continuously, not even being able to retain water. Cathartics and an enema had been given without effect. For the past twelve hours he had been hiccupping almost constantly.

Examination.—This revealed a well-developed and well-nourished man, temperature 99, pulse 100, very toxic. There were rigidity and tenderness all over the abdomen, but most marked to the right and on a level with the umbilicus. There was slight distention; no palpable masses were present.

The diagnosis was acute gangrenous appendicitis, with rather unusual obstructive features, probably due to paralytic ileus. Diverticulitis did not occur to us, though with the history and high location of the tenderness and rigidity and the obstructive feature, it should have at once suggested itself to us.

Operation.—A high right rectus incision was made. There was free fluid in the abdomen, and the intestines were congested and distended. The appendix was normal. Further exploration revealed a Meckel's diverticulum 4½ inches long, averaging 2 inches in diameter, coming off about 18 inches above the cecum. This was twisted a complete turn, the distal end enormously distended and adherent to the ileum about 12 inches from its origin. The proximal end communicated with the ileum by an opening 1 inch in diameter. It was dark colored, with apparent beginning gangrene, and at two points was thinned out, and rupture was imminent. Several loops of intestine had herniated through the loop formed, but apparently not obstructed. The obstruction, I am inclined to believe, was due to ileus dependent in some way on the twist of the diverticulum. The adhesions to the intestines were freed without difficulty, the diverticulum ligated and removed, the stump inverted and the wound closed. No drainage was inserted. The patient's bowels moved rather freely for two or three days; otherwise the convalescence was uneventful.

CONGENITAL BILATERAL CAPUT OBSTIPUM

HERBERT K. THOMS, M.D., NEW HAVEN, CONN.

Congenital bilateral caput obstipum or bilateral wryneck is a more or less rare condition. In the review of a number of reported cases, one is impressed with the fact that the vast majority of such cases were the result of trauma, and that external evidence of the injury was invariably present. It is a well known fact that children born in normal face presentation often present this condition to a greater or less degree, but in these cases the condition is nearly always transient, and usually disappears entirely in a day or two. That continued extension of the fetal head in utero can cause this condition is witnessed by a case recently reported by Morse. (*Surgery, Gynecology and Obstetrics*, 1915, xx, 74). In this instance, bilateral caput obstipum was found in an infant which presented by the brow and was subsequently delivered by cesarean section. The mother presented a generally contracted funnel pelvis. The deformity of the child persisted for four months, after which the normal attitude was assumed.

In the case here reported the condition lasted nearly three months, so that the subject becomes one of prognostic interest aside from its interest as a rare occurrence.

The patient, J. S., a Russian Jewess, was a primipara, aged 26, with negative family and past history. The pregnancy was normal throughout. The pelvic measurements were: spines, 25 cm.; crests, 29.75 cm.; trochanters, 32 cm.; external conjugate, 19.75 cm.; diagonal conjugate, not reached; transverse of outlet, 8.5 cm. A diagnosis of normal pelvis was made. Two weeks previous to the onset of labor, an abdominal examination showed the fetal position to be the right occipitotransverse, with the fetal head freely movable above the pelvic brim.

The entire first stage of labor was unsatisfactory, the pains being unusually infrequent and noneffectual. The patient was of a decidedly neurotic character, and at times it was difficult to believe that labor had really begun. Examination showed that the fetal position was the left mentoanterior with the head firmly engaged. After forty-eight hours of irregular and noneffectual pains it was decided to give the patient rest, and accordingly one-quarter grain of morphin was given hypodermically. The fetal heart at this time was regular and of good quality, so that any active interference was thought unnecessary. The cervix was about half dilated. After a period of nearly twelve hours of rest the labor became more active, and after a few hours a vaginal examination showed a full dilatation of the cervix. At this examination the membranes ruptured, and after a

few pains the head descended to a little below the level of the spines, where for nearly an hour it seemed to remain stationary. The labor pains were distinctly not of the usual second stage type, and pituitary extract was without effect. An anesthetic was administered and the patient was delivered by a comparatively easy forceps operation. The baby was a perfectly formed female child weighing 3,960 gm. (8¾ pounds), and 50 cm. (19⅝ inches), in length. The face showed marked edema and passive congestion, and the head seemed fixed in extreme extension. Aside from a slight abrasion on the right temple, the skin and muscles of the face and neck appeared normal. There was no suggestion of hematoma at any point. The attitude of the head seemed fixed, no matter in which position the infant was placed.

The puerperium was uneventful, and the edema and congestion of the face cleared up entirely in a few days. The extreme extension of the head, however, persisted, and as in the case reported by Morse, any attempt to flex the head seemed to make the child very uncomfortable. This degree of extension persisted for the entire first month of life. After this the child seemed to hold its head in a less extended position, and when 3 months old the condition approximated normal, although there was some tendency for the head to fall back in extension when the child was held upright.

It seems reasonable to believe that not only may continued extension of the fetal head in utero cause this deformity, but as in the case here reported, continued extension during a long labor may produce the same result.

419 Temple Street.

A CASE OF IMPASSABLE ESOPHAGEAL STRICTURE

ANTHONY BASSLER, M.D., NEW YORK
Clinical Professor of Medicine, New York Polyclinic Medical School

The following case is of interest because of the age, the poor results accomplished by operation, the reasons why, and the medical things devised in the case which may be of help to others.

History.—H. O., boy, aged 3, came under observation, June 25, 1913. Seven weeks before that time the mother was making soap, the child being with her in the same room. The child, taking advantage of the mother's absence from the room for a few minutes, took a mouthful of the mixture and swallowed it, his mouth and lips being badly burned by the caustic lye. For three days he could take only small quantities of fluid, the mouth being too sore to masticate foods. During these three days he vomited several times, and complained of a burning sensation in the region of the cardia. Four weeks after that he contracted measles, at which time the attending physician noticed that he could not swallow well. This dysphagia increased until finally he could not swallow the smallest quantity of fluids. During the two or three weeks before coming under observation he had little, if any, food, and in the last two or three days, after an hour's time trying, not a particle of milk would go down.

Operation and Result.—On examination an impassable stricture about on a level with the arch of the aorta was encountered. The child being very much reduced from starvation, operation was decided on, and performed by Dr. Grant in the New York Polyclinic on the following day. An opening was made into his stomach. A No. 18 F. olive could be passed from below through the stricture, but not from above downward. Abbe's string-cutting method was employed until a No. 34 F. could be passed from below up. The operation was terminated by gastrostomy for feeding, and a heavy braided surgeons' silk extending from the mouth to the gastrostomy opening. The child fed for several days through the gastrostomy opening. On the fourth day an effort was made to pass a tunnel bougie down the string, both ends being held taut; some resistance at the site of the stricture was encountered, allowing only a 28 F. to go through. Four or five days after this the child chewed the string, making impossible the passage of tunnel bougies unless another string was introduced.

At that point the troubles began, the child being old enough to have some sense and resist, and still not being old enough to be controlled mentally; gradually the stricture closed, and in three months' time following the operation an 18 F. olive could no longer be passed through it. During this time he was fed through the gastric fistula. Efforts were made to have him swallow a string. Twice he was anesthetized and a string introduced from his mouth into his stomach, but he immediately proceeded to chew the end in his mouth, cutting it in a short time. A special sound was made, having a long tapering point, the shaft being No. 25 F. Numbers of efforts showed that only the point of the sound could be made to pass the stricture. A very small sound was made with a bag attachment, which, after a number of trials, was passed through the stricture, the bag inflated from above first by means of air and then by means of water. These dilations were made with the bag below the stricture, efforts being made to pull it through, and with the bag at the site of the stricture, in the hope of dilating it at right angles, neither of which devices was successful. At the end of a year's time the stricture would permit of the passage of only a 20 F. olive. The difficulty in using a larger size was because of the irregularity of the caliber of the stricture, it being impossible to get a string through and control the boy from biting its upper end. At this time the child could swallow small quantities of fluid, but no semisolids or solids. Difficulty was also encountered in keeping the gastric fistula open. This became so acute that it was decided to allow it to close, taking chances with what could be done from above. The operation plainly was not a success, so far as giving permanent results in enlarging the stricture. Success was accomplished by the following:

Successful Procedure.—Giving the child a teaspoonful of olive oil to swallow, wrapping him up in a blanket so that he could not fight with his hands and feet, putting in a mouth gag of the form used in O'Dwyer's intubation set, with the child's body flat and the head extended in a typical gastroscopy position, and about three people to hold him, a filiform whalebone of the kind used to pass a prostatic stricture was passed into the stomach, the upper end of the filiform held by a nurse. On this filiform, which is a yard in length, funneled bougies were run through the stricture, gradually increasing it in size in a year's time, so that a No. 35 F. could be sent through. At a number of the times after passing a fairly large sized olive, elastic esophageal sounds were used, allowing the largest possible to get through and remain in the esophagus for some minutes.

At the present time the child requires to have the stricture kept open by dilation about once every eight weeks, and he is perfectly well, being able to swallow anything. By constant instrumentation, and according to the feeling, the stricture is not only enlarging in caliber, but also is not so dense as it was.

21 West Seventy-Fourth Street.

A Modified Bronchoscope Pump.—In operating with the aid of a bronchoscope, a clear and unobstructed field is almost indispensable. Frequent sponging with cotton or gauze not only retards the operator, but also frequently results in injury to the delicate mucous membrane. The sponges sometimes become detached from the holders, and their recovery is frequently a difficult and tedious task. During the past year I have in a measure overcome these difficulties by the employment of a suction pump, with 3 feet of small rubber tubing attached. The free end of the tube is connected with the base of an ordinary ureteral catheter, which is then placed inside the barrel of the bronchoscope. The diameter of the catheter is so small that it offers practically no obstruction, and a few strokes of the pump will serve at any time to clear the field of mucus and blood. While the method may not be a new one, I have never seen it suggested, and as it has proved so satisfactory in my hands, I trust that it will be of benefit to others.—CHARLES W. GOSNEY, M.D., Kansas City, Mo.

Therapeutics

MEDICATION

(*Continued from page 1094*)

Let Us Aim to Improve Our Medicinal Treatment of Disease

Many pharmaceutical firms offer compound solutions of acetanilid for which there seems to be no good excuse. A sample of one of these mixtures appears in a book of pharmaceutical formulas, issued in 1915:

℞	Acetphenetidin	256 grains
	Acetanilid	160 grains
	Caffein, citrated	64 grains
	Phenyl salicylate	64 grains
	Saccharin	2 grains
	Oil of orange	5 minims
	Alcohol	8 ounces
	Glycerin	5 ounces
	Water	1 ounce
	Dilute alcohol enough to make	1 pint

There is no good reason for combining acetphenetidin and acetanilid. The two act in the same way. The unpleasant action on the heart is as great as though the proper dose of either was administered instead of a small dose of both. The most active being acetanilid, it may be given in a smaller dose. Acetanilid is almost always given in too large doses; a small dose is generally satisfactory. It has long been shown that caffein does not prevent the toxicity of coal-tar products on the heart; in fact, caffein aggravates that activity. If a coal-tar product is given for certain kinds of headache, the caffein may add its quota in benefiting the headache; therefore a combination of caffein with a coal-tar product is often admissible. It should be recognized, however, that caffein does not protect the heart from depression from the coal-tar drug.

In certain kinds of myalgias, which occur typically with grip, salol (phenyl salicylate) may be of value, and may be combined with a coal-tar product if desired. It is markedly insoluble, and is much better administered in capsule or powder.

As acetanilid has little taste, and the dose is small, such elaborate methods of administering it seem absurd. A capsule, or a tablet (the latter crushed by the teeth before swallowing and taken with a drink of water) of either acetanilid or acetphenetidin, with or without caffein as desired, is the best method of administering these drugs. If salol is added in the same prescription, a powder may be made which, when placed in a spoon and taken with a little water and followed with more water, will leave practically no taste in the mouth.

"ELIXIR TERPIN HYDRATE WITH CODEIN SULPHATE"

This is one of the many "elegant" pharmaceutical preparations put out by practically every manufacturing pharmacist.

Each fluidram dose contains:

Terpin hydrate	1 grain
Codein sulphate	⅛ grain

The usual dose of terpin hydrate is 5 grains; any less is of little, if any, value. Therefore, the only action of this elixir is the sedative action of the codein sulphate. Why resort to a ready-made preparation to give codein?

The terpin hydrate is best ordered in tablet (to be crushed before swallowing with water), or in powder, namely:

> Terpin hydrate.....6 gm. (1½ drams).
> Make 20 powders.
> Take a powder, with water, every 4 hours.

If one desires, he may obtain or have made a tablet containing terpin hydrate .3 gm. (5 grains), and codein sulphate .008 gm. (⅛ grain).

(*To be continued*)

THE EMETIC ACTION OF TINCTURE OF STROPHANTHUS NOT DUE TO THE OIL

Several years ago, Hatcher and Eggleston[1] investigated the emetic action of digitalis. Their results showed that the digitalis bodies produce nausea and vomiting through action on the vomiting center in the medulla. The direct action of therapeutic doses of these drugs on the gastric mucous membrane is unimportant. The fixed oil or fat from digitalis, to which the emetic properties are sometimes attributed, was given to cats in large doses without producing any symptoms[2] whatever. It is clear, therefore, that efforts to avoid nausea by removal of the oil, administration through other channels than the stomach, or any other means than regulation of the dose must prove unavailing. It might naturally have been expected that the same conclusions would apply to strophanthus preparations, especially as no satisfactory evidence has been presented in support of the claim that the oil present in tincture of strophanthus helps to produce the nausea which sometimes occurs after its use. Hatcher[3] has performed experiments with oil of strophanthus, which show that this assumption is justified. He finds that the average therapeutic dose of the tincture of strophanthus contains less than one ten thousandth part of that required to produce nausea and vomiting in the cat, relative to the weight. While removal of the oil renders the tincture more "elegant" pharmaceutically, such removal is of no therapeutic importance.

1. Hatcher, R. A., and Eggleston, C.: Jour. Pharmacol. and Exper. Therap., 1912, iv, 113.
2. Eggleston, C., and Hatcher, R. A.: The Emetic Action of the Digitalis Bodies, THE JOURNAL A. M. A., Feb. 15, 1913, p. 499.
3. Hatcher, R. A.: Oil of Strophanthus and the Emetic Action of Strophanthus, Jour. Am. Pharm. Assn., February, 1916, p. 157.

Sanitary Improvement in Oysters.—The federal authorities, in cooperation with states in which the oyster industry is carried on, have completed a survey of the oyster beds from Virginia to Massachusetts. In all instances in which pollution by sewage was found possible, the beds have been placed under restriction as to the taking and handling of oysters. It is now believed improbable that oysters subject to pollution can be taken and shipped. All the oyster beds in the states mentioned have been charted. In some cases the restrictions have compelled the transplanting of oysters for a long enough time to make them free from danger of pollution, or have limited the taking of oysters to seasons when the beds are in a clean condition. The examinations of the beds included a bacteriologic examination of the oysters, supplemented by float tests. The latter test consists in starting a float at a source of sewage or other pollution, and tracing its course to see whether or not it impinges on the oyster beds. The surveys have not yet extended to the southern Atlantic states, but requests have come from the oyster men in that section for such surveys.

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SATURDAY, APRIL 15, 1916

THE TOXICITY OF COTTONSEED

The attempt to find an outlet for what was once a by-product of little value has resulted in the increasing use of cottonseed meal as a feed for some of the domestic animals. The annual production of the United States is about two million tons, now valued at about $53,000,000. Experience has gradually shown that although cottonseed meal may be fed profitably to horses, cattle, sheep, etc., in moderate amounts, poisoning and often death occur as a result, especially if the animal has not been gradually accustomed to it. It is generally avoided as a feed for pigs on account of the numerous deaths associated with its use. For example, feeding experiments at the North Carolina Experiment Station have shown that when swine are fed one part of cottonseed meal with three parts of corn meal death generally ensues in from five to seven weeks, although some pigs have been fed for a year or more without fatal results.

Numerous explanations have been ventured for this peculiar toxicity. The presence of pathogenic microorganisms and fungi has been suggested. According to the *Experiment Station Record*,[1] the cause of the poisoning has been variously ascribed to the lint, the oil, the high protein content, to a toxalbumin or toxic alkaloid, to cholin and betain, to resin present in the meal, and to decomposition products.

Considerable interest was aroused a few years ago when Crawford[2] announced that the chief poisonous principle in certain cottonseed meals is a salt of pyrophosphoric acid. This contention, if substantiated, would have a wide application not alone in relation to animal feeds but possibly also as a danger concerned in human nutrition. Vigorous propaganda has lately been made in favor of the use of cottonseed flour for human consumption. The assertions of Crawford have been refuted by Symes and Gardner[3] in England and likewise by Withers and Ray[4] of the North Carolina Experiment Station. There is little if any evidence to show that cottonseed meal actually contains either pyrophosphoric or metaphosphoric acid, or that the salts of these acids are correspondingly toxic in the quantities that might be present in cottonseed rations.

Withers and Carruth[5] have at length definitely associated the toxicity of cottonseed with gossypol, a substance first isolated from cottonseed oil by Marchlewski[6] in 1899. It is a phenolic substance obtainable in the form of crystalline derivatives; but the exact chemical structure has not yet been ascertained. The compound is readily soluble in organic solvents which are effective in the case of fats and related substances.

Gossypol is fatal to laboratory animals. The smallest amount of gossypol administered intraperitoneally and found fatal to rabbits was 0.24 gm. of crystalline gossypol acetate per kilogram of live weight. It forms an oxidation product which is nontoxic. Such preliminary investigations as have already been conducted indicate that methods for rendering cottonseed kernels nontoxic depend on extracting the gossypol or changing it to physiologically inert forms by oxidation or by precipitation. The seed tissue surrounding the cells probably prevents the free action of reagents which would extract gossypol or render it physiologically inert. This constitutes the principal difficulty that must be overcome by the oil miller or stock feeder in rendering cottonseed meal nontoxic. With one harmful substance in some degree identified and the probability of other alleged toxic agents such as the phosphoric acids partly excluded, it may be prophesied that an otherwise valuable food material like the cottonseed will soon be convertible into an entirely harmless product.

1. Experiment Station Record, 1910, xxii, 501.
2. Crawford, A. C.: A Poisonous Principle in Certain Cottonseed Meals, Jour. Pharmacol. and Exper. Therap., 1910, i, 519.
3. Symes and Gardner: Biochem. Jour., 1915, ix, 9.
4. Withers, W. A., and Ray, B. J.: Studies in Cottonseed Meal Intoxication, I, Pyrophosphoric Acid, Jour. Biol. Chem., 1913, xiv, 53.
5. Withers, W. A., and Carruth, F. E.: Gossypol, the Toxic Substance in Cottonseed Meal, Jour. Agric. Research, 1915, v, 261.
6. Marchlewski, L. P. T.: Gossypol, ein Bestandtheil der Baumwollsamen, Jour. Prakt. Chem., 1899, lx, 84.

A HARVEY ANNIVERSARY: 1516-1916

In August, 1615, William Harvey was appointed to the office of Lumleian lecturer of the College of Physicians of England. His first course of anatomic lectures was delivered just three hundred years ago — Tuesday, Wednesday and Thursday, April 16, 17 and 18, 1616. The following Tuesday, April 23, Shakespeare died at Stratford-on-Avon. Thus it happens that both science and literature have occasion to observe appropriate tercentenary celebrations during the present year.

Of the Shakespeare anniversary much has been written of late, and many appropriate observances have been planned. It may be asked wherein justification exists for the selection of this date for special reference to the life of Harvey. It is true that his classic treatise on the circulation of the blood was not published until sixteen years later, in 1628. But it is also more than probable that in the Lumleian

lectures of 1616 Harvey began to teach that doctrine which has immortalized his name. In this narrower sense, then, we are celebrating the earlier announcement of a great discovery. When a few years later Harvey issued his book "De Motu Cordis et Sanguinis" at Frankfort-on-the-Main, he gave his reasons for believing that the blood circulates, and explained the use of the heart in language so simple, so clear, so exact, that now, to quote one of his biographers — Parkyn — nearly three hundred years afterward, the most accomplished physiologist can hardly improve on it. This assuredly is a fact almost unique in the history of science.

The greatness of Harvey's deserts begins to appeal to us when we try to comprehend what the physiologic sciences and medicine would be today without any knowledge of the circulation of the blood. It is difficult to imagine the chaos of a higher organism devoid of what is now universally appreciated as one of the very fundamentals of life. It is sometimes maintained that the doctrine which Harvey propounded was not new with him. Even Shakespeare has been cited as being acquainted with the circulation of the blood, because he refers to its movement. But movement must not be confused with circulation. From the earliest times it has been believed that there was motion of the blood, but there was no clear or correct idea as to the nature of the movement. Haller,[1] the cyclopedic physiologist of the eighteenth century, clearly sensed the situation. He wrote:

> It is not to Caesalpinus, because of some words of doubtful meaning, but to Harvey, the able writer, the laborious contriver of so many experiments, the staid propounder of all the arguments available in his day, that the immortal glory of having discovered the circulation of the blood is to be assigned.

In his admirable "Lectures on the History of Physiology," Sir Michael Foster[2] writes:

> It is a fashion to speak of Harvey as "the immortal discoverer of the circulation"; but the real character of his work is put in a truer light when we say that he was the first to demonstrate the circulation of the blood. His wonderful book, or rather tract, for it is little more, is one sustained and condensed argument, but an argument founded not on general principles and analogies but on the results of repeated "frequent appeals to vivisection" and ocular inspection. He makes good one position, and having done that advances on to another, and so marches victoriously from position to position until the whole truth is put clearly before the reader, and all that remains is to drive the truth home by further striking illustrations.

Some languid plodder may ask, further, why the busy devotees of science and medicine should stop to recall the anniversary of the days prior to the publication of the matured account of the circulation of the blood, of which — quoting D'Arcy Power[3] — "the germ had appeared in the notes of the Lumleian visceral lecture for 1616." The answer is that without this knowledge, any real understanding of the function of the body is impossible. Says Sir John Simon:

> To medical practice it stands much in the same relation as the discovery of the mariner's compass to navigation; without it, the medical practitioner would be all adrift, and his efforts to benefit mankind would be made in ignorance and at random. . . . The discovery is incomparably the most important ever made in physiological science, bearing and destined to bear fruit for the benefit of all succeeding ages.

1. Haller, A.: Elementa Physiologiae, 1757, i, Liber III.
2. Foster, Michael: Lectures on the History of Physiology, Cambridge, 1901, p. 42.
3. Power, D'Arcy: Masters of Medicine: William Harvey, 1897, p. 188.

"COLD IN THE HEAD"

It has been commonly observed that no immunity is acquired as the result of an attack from a common cold. This, with other attendant peculiarities of coryza and related conditions, has raised the question whether colds can be attributed as largely to the agency of bacteria as has been the tendency during recent years. The very expression "catching cold" is now usually interpreted from the standpoint of infectious disease, and there can be little doubt that many features associated with the genesis of colds suggest the interference of living micro-organisms. Colds spring up suddenly among groups of persons when there are possibilities of a common exposure. Thus an entire family may become afflicted. On the other hand, an acute nasal catarrh or so-called "cold in the head" sometimes promptly follows exposure to drafts in a way that seems to exclude the probability of any special primary infective agent. This diversity of opinion with respect to the etiology of common colds, whereby some writers assert that the latter are always due to bacteria of some sort,[1] while others decline to admit this mode of origin as the only way in which the disturbance in health is created, has given rise to corresponding divergences in the advice as to the hygiene of the subject. The question may be asked, Can one become "hardened" to the possibility of attack by suitable living?

To a certain degree at least, resistance to bacterial invasion and immunity to changes in temperature and humidity must be acquired by different physiologic mechanisms. The "Handbook of Therapy," issued by the American Medical Association,[2] takes a middle course in these words:

> Whether or not every cold is due to contagion or to a germ, chilling, whether indoors or outdoors, certainly predisposes to colds. It is quite probable that chilling of the surface of the body congests the inner organs and possibly the mucous membranes of the air passages. If the mucous membrane of the nose is congested, it more readily becomes inflamed by irritation or by germs.

With respect to the condition of the nasal respiratory passages, the familiar seat of coryza, Leonard Hill[3] observed that the nasal mucosa became swollen

1. Compare Chodunsky: Erkältung und Erkältungskrankheiten, Vienna, 1907.
2. Osborne, O. T.; Fishbein, Morris, and Salisbury, J. H.: Handbook of Therapy, Chicago, 1915, p. 206.
3. Hill, Leonard, and Muecke, F. B.: Colds in the Head, Lancet, London, May 10, 1913.

and red in warm, moist air, accompanied by a marked increase in the amount of secretion. On passing from warm to cold air, he found that the mucous membranes became paler, but still remained swollen. He believes that this condition predisposes to disease for the reason that the defensive mechanism of the blood, the immunization properties of the plasma, the cleansing action of the cilia and the phagocytic action of the white blood-cells are all diminished by the cold, while the pathogenic bacteria find a suitable nidus for their growth in the secretion of the swollen mucous membrane. Hill found that keeping the air in motion in warm rooms interfered materially with the hyperemic effect, and believes that in this way the massiveness of direct infection is reduced. He also observed that warm dry air produced less swelling and secretion than warm moist air.

Further facts regarding the exact place of atmospheric changes in the production of respiratory disease have recently been contributed through the scientific work of the New York State Commission on Ventilation.[4] Clinical experiments have been conducted on nearly 150 male subjects including, among others, workers whose occupation in itself was associated with certain distinctive temperatures, such as truck drivers exposed to the varied weather conditions, boiler makers and firemen used to hot, dry atmospheres, and laundry workers who are exposed to heat and humidity. These subjects have been exposed in an experimental chamber at times for several hours to extreme heat and humidity or to cold, and at other times they have been shifted back and forth from one extreme to the other. Ordinarily it was found that heat causes a swelling of the inferior turbinates of the nose, tending to a reduction in the size of the breathing space, and to increase of secretion and reddening of the membranes. The action of cold, as a rule, is just the opposite, namely, a reduction in the size of the inferior turbinates, and a diminution of secretion and color of the membranes. In the industrial workers, mentioned above, whose occupations involved continuous exposure to extremes of heat and cold, these typical changes were not followed. This study was very successful in picturing how the membranes of the nose of such persons are less able to make the adaptations of the normal nose to changes in the atmospheric environment.

A further suggestion that abnormal conditions of a permanent nature may be produced by repeated exposure to overheating was found in observations among long-time workers in hot, moist rooms such as are found in steam laundries. In this group atrophic rhinitis was far more prevalent than among young students. Of course, contagion may be an added etiologic factor under such circumstances. Moist heat appears to produce greater changes than does dry heat in the nasal passages. There is some physiologic indication that the reaction of the nasal structures to atmospheric changes is primarily direct and local, rather than reflex; but the evidence on this point is by no means conclusive.

Cocks, who conducted most of these investigations on the respiratory tract, points out that turbinate responses are very delicate and that the changes observed are by no means always constant. Obviously it is important to place the subject of "colds in the head" on a more scientific basis as the result of investigations such as those here outlined, which do not feature the problem of pathogenesis solely from the bacteriologic standpoint. The reactions in the nasal mucous membranes produced by changes in atmospheric environment are, says Cocks, too frequent and too definite to be disregarded. Accordingly, he is convinced that the theory of bacterial infection as the sole cause of catarrhal inflammations of the upper air passages is not tenable, since the changes produced by environment must materially affect the incidence of infection.

Elsewhere[5] in this issue, Foster reports experiments from which he concludes that common colds — of a certain type at least — are infectious and that the causative virus occurs in nasal secretions. The Berkefeld filtrates of subcultures of this virus he found were capable of producing symptoms of an acute cold in healthy persons. His results are significant and should be followed by experiments for further evidence pointing toward their confirmation.

ANAPHYLAXIS IN CERTAIN SKIN DISEASES

Progress in the understanding of anaphylaxis, or the sensitization of the body to foreign proteins, has occurred in two lines. One line concerns the exposition of the chemical nature of the protein and the mechanism of production of the reaction.[6] The specificity of proteins depends not on their biologic source but on their chemical constitution. The other line of progress has concerned the elucidation of anaphylactic reaction as an etiologic explanation of various disease conditions, and has considered the control or removal of such etiologic factors.

The relation between specific protein sensitization and various diseases is being given increasing attention. Certain forms of asthma are considered by some to represent a specific reaction to bacterial proteins. So, too, it has been held that mucous colitis represents a similar reaction. Cases of peculiar sensi-

4. The newest data are reported in the outline of the activities of the commission, presented by the chief of the investigating staff, George T. Palmer, at the annual meeting of the American Society of Heating and Ventilating Engineers, New York, Jan. 20, 1916. See also Cocks, G. H.: Experimental Studies of the Effect of Various Atmospheric Conditions upon the Upper Respiratory Tract, read before the American Laryngological, Rhinological and Otological Society, at the Twenty-First Annual Meeting, in Chicago, June 15-16, 1915.

5. Foster, G. B.: The Etiology of Common Colds, THE JOURNAL A. M. A., this issue, p. 1180.

6. Proteins and Anaphylaxis, editorial, THE JOURNAL A. M. A., Jan. 1, 1916, p. 36.

tivity to various food proteins, such as pork, veal, egg albumin and fish, are of not infrequent occurrence. Autumnal and spring fever or vasomotor rhinitis are recognized as specific reactions to the invasion of proteins of pollen, bacteria or animal products, as in the dust from horses or other animals. Thus the eye of anaphylactic suspicion is being turned on many diseases of unknown or obscure etiology.

Attention has recently been directed to the possible rôle of anaphylaxis in skin diseases beyond the recognized production of serum skin reactions. McBride and Schorer,[7] for example, have shown that in predisposed persons certain protein foods cause urticaria, erythemas and other symptoms, each food giving a fairly specific type of skin reaction. They point out that fish, tomatoes and cheese more commonly cause an urticaria which, however, is of less frequent occurrence than the erythemas following the ingestion of pork or cereals. Again, tomatoes and cereals produce their reaction usually within one hour, and the duration of the lesions seldom exceeds twenty-four hours. They note the frequent hereditary nature of the sensitization to egg albumin, pork and cereals. These resemble typical anaphylactic characteristics. McBride and Schorer classify the causes of these phenomena as: (1) true anaphylaxis to foods as such, or to foods as changed by parasites or during disease; (2) consumption of partially spoiled or decomposed foods, and (3) simple idiosyncrasy. It is to be pointed out in connection with the assignment of simple idiosyncrasy as a cause of such clinical phenomena that this merely begs the question and explains nothing. These authors urge that treatment as well as diagnosis should be specific. As indicated in their classification of etiology, other disease processes must first be excluded, as also the presence of parasites, either of which might be responsible for a change of the food proteins into toxic forms, whereas the original proteins might produce no reaction. In the absence of parasites or other diseases, immunization is often possible by proper feeding.

Another application of this principle in the study of skin diseases may be made in eczema. A relation has long been held to exist between diet and eczema, and regulation of diet is an established principle of its treatment; but a reasonable and explicit explanation has been lacking, and there has been a corresponding inexactitude in treatment and diagnosis.

White[8] reports an instructive study of infantile eczema in its relation to food. Eczematous infants are generally found to have an excess of fats or carbohydrates in their stools, excess of the former being associated with moist eczema and of the latter with dry eczema. Failing an excess of fecal fat or sugar, a susceptibility to egg albumin or to milk is to be sought. White suggests a further possibility in deficient thyroid secretion. Sensitization to egg albumin or to milk can be demonstrated by a method of cutaneous inoculation analogous to the von Pirquet and the Schick reactions. Other food elements can also be tested out by cutaneous inoculations and also, as certain authors have done, by the more delicate intradermal inoculation. Ordinarily normal individuals give no response to such inoculation. White finds that the great majority of cases of chronic eczema seem to show anaphylactic reactions to one or more types of food proteins. Similar phenomena are present in acne and urticaria.

About 20 per cent. of White's patients did not exhibit sensitization to any of the common food types. He ascribes this either to the possibility that not all eczema is due to food sensitization or that these patients are sensitized to some food type which has not yet been experimentally tested. In practically 30 per cent., one or more controls were positive, a circumstance which he believes analogous to the presence of dermographia in urticaria. It is not possible to determine from the variety of eczema what particular food will give a positive skin reaction.

These far reaching studies seem to invite the question as to whether resistant affections of the skin which are not of a direct parasitic nature, such, for example, as psoriasis, may not eventually be explained in a similar manner.

7. McBride, W. L., and Schorer, E. H.: Erythematous and Urticarial Eruptions Resulting from Sensitization to Certain Foods, Jour. Cutan. Dis., 1916, xxxiv, 70; abstr., THE JOURNAL A. M. A., March 18, 1916, p. 919.

8. White, C. J.: The Anaphylactic Phenomenon in Eczema, Jour. Cutan. Dis., 1916, xxxiv, 57; abstr., THE JOURNAL A. M. A., March 18, 1916, p. 918.

NATIONAL BABY WEEK

The idea of a national baby week originated in 1915, in the General Federation of Women's Clubs, as the result of the successful local events of that character which had already been held, first in Chicago, in 1914, and later in New York, Pittsburgh, Indianapolis and elsewhere. Without the support of the Children's Bureau, however, a national baby week would probably never have been the success it has been. This bureau prepared a special bulletin on the local organization and management of baby week campaigns, and spread it broadcast through the country; it undertook to supply inquirers with information bearing on such projects, and it enlisted the sympathy and support of most of the agencies, national, state and local, public and private, available for the furtherance of the work. Forty-seven state departments of health gave their approval and encouragement, and forty-four universities, most of them state universities, joined actively in the work. Letters concerning baby week came to the Children's Bureau from 4,500 communities in the United States. It is estimated that in 4,000 communities, events of some kind have been held as the result of this agitation, varying from a single meeting up to the most elaborately planned and

conducted affairs extending over the entire week. In Kansas, 500 communities observed the occasion. In Washington, D. C., baby week comprised an exhibit, lectures, demonstrations and publicity through the newspaper press and otherwise. Churches, schools and moving picture theaters cooperated with the movement. Elsewhere there occurred several novel developments along the line of educational work that are worthy of special mention.

In Baltimore, a newspaper devoted half a page every day for several weeks to information about child welfare, with particular reference to local needs. Prizes were offered by this paper for the best three original posters based on the information contained in its columns, and as a consequence all contestants necessarily read the information furnished, as did others who were watching the result of the contest.

In Trenton, N. J., interested mothers were supplied with a list of questions concerning the care and feeding of children, and a prize was given for the best set of answers. This idea has been elaborated on in New York, where questions have been supplemented by a series of lectures to aid contestants in the preparation of the answers.

In Wisconsin, the greatest stress seems to have been laid on prenatal care. An interesting feature in Kansas was an intercounty contest, from which the healthiest county in Kansas will win the governor's trophy for 1916. In some places, contests have been held for the best baby week slogan, in others for the best advice for window publicity, and in others for the best school essay on the subject of baby welfare. At least one community has endeavored to have a flag exhibited by every family in which a child has been born during the year.

To supply suitable pamphlets for these meetings, the American Medical Association Press printed a special edition of 225,000 "Save the Babies" pamphlets.

It is impossible, of course, to measure as yet the far reaching influence of the national baby week, but undoubtedly it has left its permanent imprint on many of the communities in which it has been celebrated. Already it has led to the organization in various places of permanent groups to maintain the interest that has been aroused. In some communities it has led to the recognition of the need for better prenatal care; in others, to the need for the proper registration of births. Elsewhere, it has been determined to establish baby clinics, or "consultations." In another place the need for the improvement of the milk supply has been brought to the front. We understand that baby welfare will be featured at some of the Chautauquas held during the present year. The work that has been or is to be done by any community for the welfare of its babies must undoubtedly lead to an enlarged and better interest in the health of the community generally.

Current Comment

THE INTERNATIONAL COMMISSION ON BOUNDARY WATERS

It is with a sense of relief that one turns from the disturbed relations which have so long prevailed on our Mexican border to study the work of the International Joint Commission of the United States and Canada, a brief report of which appears in another column.[1] During the very period when our Mexican troubles have been brewing and during a veritable pandemic of international misunderstandings and strife, this commission has finally adjusted and settled more controversies between the people of Canada and the United States and between the two governments than were previously settled and adjusted through the diplomatic agencies of England and the United States since the beginning of our government.[2] The commission was created by the treaty of Jan. 11, 1909, between Great Britain and the United States, to prevent disputes regarding the use of boundary waters; to settle all questions then pending between the United States and the Dominion of Canada involving the rights, obligations and interests of either in relation to the other along their common frontier, and to make provision for the adjustment and settlement of all such questions as might thereafter arise. The most obvious need for such a commission resulted from the use of boundary waters for the development of water power, and the consequent interference with navigation and the submerging of agricultural and timber lands on both sides of the international line by works constructed on either side. The treaty under which the commission was created provided, however, that the waters therein defined as boundary waters and waters flowing across the boundary should not be polluted on either side to the injury of health or property on the other. Because of alleged violations of this clause, the commission was instructed by the two governments which it represented to investigate and to report whether these waters were or were not polluted; and if so, at what places, from what sources, and to what extent, and the necessary remedies. By authority of the commission, and under direction of Dr. Allen J. McLaughlin of the United States Public Health Service, the required investigation to determine the extent, location and sources of pollution was completed some time ago, and a report submitted under date of Jan. 16, 1914. In the seventeen field laboratories established for that purpose, there were examined bacteriologically 19,000 samples of water, representing probably the most extensive bacteriologic study of water ever made up to that time. The boundary waters generally were found to be polluted, some of them grossly so. In the Great Lakes, however, the pollution was confined to the shore fronts. The search for the remedies for the pollution has been conducted under direction of Prof. Earle B.

1. The International Joint Commission on Boundary Waters, miscellany, THE JOURNAL A. M. A., this issue, p. 1266.
2. Senator Wesley L. Jones of Washington in United States Senate, Feb. 26, 1915.

Phelps, of the United States Public Health Service, as consulting sanitary engineer. It is the report on this branch of the inquiry which was considered at the recent meeting of the commission and is now in course of publication. The report will be awaited with interest, as the polluted waters to which it relates are said to concern more or less directly the health of a population of more than 7,000,000 persons.

A MUCH-NEEDED PHARMACOLOGIC INVESTIGATION

Dr. J. D. Pilcher, professor of pharmacology in the University of Nebraska College of Medicine, has recently investigated the action on the uterus of a number of drugs whose actions have previously been little, if at all, investigated.[1] The fifteen substances examined are used chiefly as ingredients of proprietary "female remedies." One drug, blue cohosh (*Caulophyllum thalictroides*), showed a variable tonic effect. Five, pulsatilla (*Anemone pulsatilla* or *Pulsatilla pratensis*), unicorn root (*Aletris farinosa*), figwort (*Scrophularia marylandica*), valerian (*Valeriana officinalis*) and skullcap (*Scutellaria lateriflora*), were more or less depressant, the last named, however, less so than any of the others. The remainder of the drugs gave negative results; these comprised cramp bark (*Viburnum opulus*), black haw (*Viburnum prunifolium*), swamp maple (*Acer spicatum*), false unicorn (*Chamaelirium luteum* or *Helonias dioica*), liferoot (*Senecio aureus*), wild yam (*Dioscorea villosa*), motherwort (*Leonurus cardiaca*), passion flower (*Passiflora incarnata*) and squaw vine (*Mitchella repens*). The preliminary abstract published indicates that the work is not only of great interest but also of very practical importance. It has long been needed. The drugs that Pilcher found to be inert have been lauded by manufacturers of proprietaries until many of us had been led to believe that they were of real therapeutic value. The fact that two of these inert drugs have even become official (though one of them will be dropped from the forthcoming edition of the Pharmacopeia) shows the imperative need of such investigations. It is to be hoped that the full report of his work, when published, will permit the formation of an opinion as to the therapeutic value of those drugs in which some degree of activity has been found.

THE LANCET-CLINIC FOR HONEST THERAPEUTICS

The *Lancet-Clinic*, Cincinnati, is one of the old standbys among the medical journals of this country. There was a time when its influence was as great as that of any other journal, for while it did not pretend to be a national institution, to all intents and purposes it was; in any event, it had a clientele in the great Mississippi Valley — which from one point of view extends from the Alleghanies to the Rockies — that was large in numbers and progressive in its ideals. In the middle of the front page of the issue for April 1 the following announcement is made in display type:

> With this issue the editorship of the *Lancet-Clinic* has passed into the hands of Dr. Martin H. Fischer. The advertising pages conform to the rules of the Council on Pharmacy of the American Medical Association.

In an editorial note in the same issue, referring to the determination of the New York *Evening Telegram* to decline the publication of certain advertisements, the *Lancet-Clinic* says:

> The columns of the medical man's favorite scientific journals should likewise be cleansed of the near-quack advertisements that disgrace them. When the lay press discovers it necessary to decline objectionable advertising through force of public opinion, the physicians should find it comparatively easy to make the publishers of medical journals realize that the best way to retain their subscriptions is by purging their journals of everything objectionable in the advertising line.

A glance through the advertising pages — and of course they have been reduced tremendously — will show that the advertisements of nostrums that were familiar to the readers of the *Lancet-Clinic* for so many years are absent. We welcome the *Lancet-Clinic* to the steadily increasing number of medical journals which prefer to make financial sacrifices rather than support and encourage the use of fraudulent nostrums. But the members of the medical profession in Cincinnati and the tributary territory should realize that this action on the part of the *Lancet-Clinic* means a great financial sacrifice, and they should step in and help to supply the deficiency by giving it their practical support in the form of subscriptions.

WHY GLYCEROPHOSPHATES?

Physicians who prescribe on definite principles must often be puzzled by the number and variety of glycerophosphates on the market. All available evidence indicates that, as sources of phosphorus to the animal organism, the glycerophosphates possess no advantages over the ordinary inorganic phosphates.[1] The glycerophosphates are split up in the intestine, and liberate inorganic phosphates. In this form they are absorbed and utilized, if they are utilized at all. There is no evidence that glycerophosphates have any pharmacologic action to warrant the belief that they are of use as therapeutic agents. The theory that organic phosphorus compounds are more readily assimilable than inorganic compounds and hence a better means of introducing phosphorus into the system is still kept alive in the promotion of certain proprietary mixtures, in spite of the scientific evidence that the organism can assimilate phosphorus quite as readily from inorganic as from organic phosphorus compounds.[2] The glycerophosphates will continue to be manufactured until physicians refuse to prescribe them. A chemist in the "research laboratory" of a well-known manufacturing firm has recently given a rather interesting reason for the use of glycerophosphates —

1. Pilcher, J. D.: The Action of Certain Drugs on the Excised Uterus of the Guinea-Pig, Proceedings of the American Society for Pharmacology and Experimental Therapeutics, Jour. Pharm. and Exper. Therap., February, 1916, p. 110.

1. Organic Phosphorus Compounds, editorial, THE JOURNAL A. M. A., June 21, 1913, p. 1958. Marshall, E. K.: The Therapeutic Value of Organic Phosphorus Compounds, THE JOURNAL A. M. A., Feb. 13, 1915, p. 573.

2. Marshall, E. K.: The Therapeutic Value of Organic Phosphorus Compounds, THE JOURNAL A. M. A., Feb. 13, 1915, p. 573.

from the manufacturers' point of view. He is quoted as saying:[3] "On account of the instability of phosphorus in elixir of phosphorus, nux vomica and damiana we have quite recently replaced the phosphorus by glycerophosphates. Such a preparation is apparently equally as effective, for we continue to have a great demand for it." This is doubtless a sufficient reason for the substitution from the manufacturers' point of view; but how about the patient, who, after all, is the one to be considered? Is it not a matter of considerable importance to the patient whether he receives phosphorus, one of the most powerful drugs known, or the inert glycerophosphates? The chemist's statement seems to imply that it is not. It may be of interest to recall that a member of the firm whose chemist gives this "reason" for the use of glycerophosphates, in a recent address,[4] was rather severe in his condemnation of institutions of learning, hospitals, etc., for their lack of cooperation with manufacturers: he said that "they should welcome an opportunity to let any manufacturer try out or test his products in their clinics, laboratories, etc." A test as to whether there is a difference between the action of glycerophosphates and ordinary poisonous yellow phosphorus, especially when the former are mixed with extracts of nux vomica and damiana, would not be likely to appeal to many hospitals and laboratories as a very promising field of research at this day since, as has been stated, the scientific evidence at present available does not furnish any warrant for the therapeutic use of glycerophosphates.

THE ETIOLOGY OF SCARLET FEVER

A recent announcement by Mallory and Medlar,[5] of the Pathological Laboratory of the Boston City Hospital, gives occasion for the inference that scarlet fever may be due to a strongly gram-positive bacillus (*B. scarlatinae*) which is less virulent than the diphtheria organism, but which infects practically the same localities and in severe cases may extend in the same way to adjoining tissues, especially the larynx, trachea and lungs. There is no membrane formation, unless because of secondary streptococcus invasion, to call attention as in diphtheria to the lesions. Fibrin formation is usually absent or slight. The primary gross lesions are so inconspicuous as to be easily overlooked. The Boston investigators state that the toxin of the organism discovered by them causes necrosis and denudation of the covering epithelium, and leads to an exudation of serum and polymorphonuclear leukocytes. They first discovered the specific bacilli here referred to on the second day following the skin eruption in a case of scarlet fever. The organisms were present in the upper portion of the fibrinopurulent exudate covering the walls of some of the crypts of the tonsils, from which the lining epithelium had disappeared. The bacilli grow in between the epithelial cells, killing them and causing the exudate already referred to. Additional masses of the organism were found in practically pure culture in slight depressions and erosions in the squamous epithelium covering the tonsils, pillars of the fauces, the soft palate and uvula, and the root of the tongue. It is, of course, familiar that a large number of investigations have seemed to furnish evidence for the etiologic relationship of streptococci to scarlet fever. These micro-organisms have been found with striking regularity in the throats of patients exhibiting the disease. The bacillus of scarlet fever described by Mallory and Medlar is said to die out quickly in the lesions, so that after the second or third day following the eruption it is difficult or impossible to demonstrate it. The way is then opened for streptococcus invasion, and the conditions seem to favor its growth. These observations may serve to explain the failure in the past to detect the bacillus now reported. Experience in the study of scarlet fever has shown how futile it is to reach any hasty generalizations in respect to its etiology. All sorts of claims have been made. Long ago Mallory[6] expressed the belief that scarlatina is caused by protozoa which were supposed to reside between the epithelial cells in the skin; but subsequent investigations failed to substantiate this. Streptococcus infection unquestionably complicates the disease, even though there is no convincing evidence in favor of a streptococcic etiology of scarlet fever. Every new observation by competent investigators bearing on the problems of this important malady, therefore, still deserves earnest consideration with an open mind.

3. Jour. Am. Pharm. Assn., December, 1915, p. 1458.
4. Jour. Am. Pharm. Assn., September, 1915, p. 1105.
5. Mallory, F. B., and Medlar, E. M.: The Etiology of Scarlet Fever, Jour. Med. Research, 1916, xxxiv, 127.
6. Mallory: Jour. Med. Research, 1904, x.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

DISTRICT OF COLUMBIA

New Municipal Hospital.—Plans for a new municipal hospital, which are said to have received the approval of the National Commission of Fine Arts, have just been made public. The project calls for the immediate construction of the administration building, the nurses' home and a service building, and of psychopathic, medical and surgical wards to accommodate 300 patients, and to cost, with equipment, $300,000. The hospital is to take the place of the Washington Asylum Hospital, the condition of which has been commented on in THE JOURNAL, April 8, 1916, p. 1123. It is proposed to erect it on land bought for that purpose fifteen years ago, but persons dwelling in the vicinity threaten to fight any request that may be made for an appropriation for its construction on that site.

Economic Conditions in Relation to Disease.—Surgeon-General Gorgas, in a recent address before the Consumers' League of the District of Columbia, discussed the relations of wages to health. To the high wages paid in the Canal Zone he attributed no small part of the improvement in the health of the people, outside of the improvement due to the elimination of yellow fever and the reduction in the prevalence of malarial fever through drainage operations and the use of screens and oil. Calling attention to the declaration of an expert that 55 per cent. of the arable land of the United States is not under cultivation, he suggested the adoption of a system of taxation that would compel its use, and in this way draw from the more densely populated localities some of the labor, whose presence there in excess tends to keep wages down and thus tends to lower health standards.

ILLINOIS

Milk Commission for Sangamon County.—The Sangamon County Medical Society has organized a milk commission, which has established regulations for the certification of milk.

Leper Colony to be Founded.—Following the discovery, March 31, that Miguel Vasquez, Moline, was suffering from leprosy, Dr. George A. Zeller of the state board of administration announced that the state would establish a leper colony at Watertown.

Personal.—Dr. William D. Nelson, Jr., Canton, who was seriously injured, March 17, in an automobile accident in Oklahoma, has recovered and returned home.——Dr. Henry F. Becker, Danville, is reported to be ill with gastritis.——Dr. E. L. Emerson, who has practiced for many years in Matherville, has announced his intention of retiring from practice.

Chicago

Clean Living.—The first issue of *Clean Living*, the new municipal health monthly, has appeared and contains articles by Dr. G. Frank Lydston on "The Germ in the Cards"; by Dr. Henry F. Lewis on "The Philosophy of Pain," and by Dr. Maximilian Herzog on "The Prevalence of Trichinosis and its Prevention."

Personal.—Dr. George Guca, who was a passenger on the steamer *Brindisi* which was torpedoed off Albania in January, reached Boston, April 7.——Dr. Ralph H. Kuhns sailed for Europe on the *Oscar II*, April 6, and will be assigned to Red Cross work in Germany.——Dr. Norman MacLeod Harris of the University of Chicago left, April 5, for Toronto, where he will join the Canadian Army Medical Corps.

Chicago Men Speak Away from Home.—Dr. Frank E. Simpson delivered an address before the Racine County Medical Society, March 30, on "Radium and Its Uses in the Treatment of Cancer and Other Skin Diseases."——Dr. Nelson M. Percy addressed the Seventh District Medical Society at its meeting at Sioux Falls, S. D., April 4.——Dr. Alfred A. Strauss delivered an illustrated lecture before the Dubuque (Iowa) Medical Association, March 28.——Dr. Charles A. Parker addressed the Rock County (Wis.) Medical Society, March 28, on "Some Things Worth Knowing About Joints."

Sachs Memorial Meeting.—On Sunday last an audience which filled the Auditorium paid tribute to the memory of Dr. Theodore B. Sachs. Dr. Frank Billings presided and the keynote of the meeting was the prevention of political tampering with welfare work. In addition to the address of Dr. Billings, Victor Olander, secretary of the Illinois Federation of Labor; Dr. William E. Quine, Sherman C. Kingsley and Prof. Graham Taylor spoke, and resolutions introduced by John V. Farwell were adopted pledging cooperation with the committee of one hundred in its work of preventing the introduction in the Municipal Tuberculosis Sanatorium of spoils politics. Mrs. Arthur T. Aldis, president of the Visiting Nurses' Association of Chicago, also paid tribute to the devotion of Dr. Sachs to his work. Dr. Billings then spoke of the plan to erect a hospital, to cost $250,000, on the grounds of the Edward Sanatorium, Naperville, as a memorial to Dr. Sachs, and telegrams were read from Mrs. Keith Spalding and Julius Rosenwald pledging contributions of $5,000 each for this purpose.

INDIANA

Personal.—Dr. H. H. Mitchell, formerly of Boston, has been secured by the state board of health, Indianapolis, as state epidemiologist, succeeding Dr. William F. King, who will give his attention to school hygiene in the state.——Dr. Ralph R. Coble, Indianapolis, has been appointed deputy coroner of Marion County, succeeding Dr. Herbert T. Wagner.——Dr. Chester Demaree, bacteriologist of the state board of health, has resigned to accept a similar position under the State Board of Health of Iowa.——Dr. Francis M. Mueller, Lawrenceburg, has been elected president of the Dearborn County Medical Society for the Prevention of Tuberculosis.——Dr. Herman G. Morgan, city sanitarian of Indianapolis, has been elected president of the Indiana Health Inspectors' Association, which was organized in Indianapolis, March 16.

KENTUCKY

New Medical Society.—The medical men of Lewis County recently met at Maysville and organized a county medical society, electing Dr. Lewis A. Grimes, Concord, president; Dr. Tolbert B. Ginn, Charters, vice president, and Dr. Herbert M. Bertram, Vanceburg, secretary-treasurer.

Personal.—Dr. John S. Smith, McHenry, was stricken with cerebral hemorrhage, March 28, and is in a serious condition.——Dr. William R. Thompson has been elected president of the newly organized Health and Welfare League of Montgomery County at Mt. Sterling under the State Tuberculosis Commission.——Dr. Wallis Bailey, Salyersville, is reported to be in a serious condition in a hospital in Huntington, W. Va., as the result of a cerebral hemorrhage.——Dr. Dunning S. Wilson, Louisville, has been elected a director of the National Association for the Study and Prevention of Tuberculosis to fill the unexpired term of Dr. Charles J. Hatfield.——Dr. Philip L. Coulter is under treatment at Covington for acute trachoma, contracted while engaged in the campaign against trachoma in the vicinity of Welch, W. Va.——Dr. Roy F. Robinson, second assistant physician at the Western Kentucky State Hospital, Hopkinsville, has resigned and will practice in Madisonville.

MARYLAND

Personal.—Dr. Raymond L. Johnson of the resident staff of the University Hospital resigned, March 31, to accept a position with the Atlantic Coast Line Hospital, Waycross, Ga.——Dr. Joseph C. Bloodgood, Baltimore, held a cancer clinic at the University of California Hospital, San Francisco, March 31, under the auspices of the California Academy of Medicine.

Washington Suburban Sanitary Commission.—The Maryland legislature, at the session just ended, created a commission to be known as the Washington Suburban Sanitary Commission, to study the matter of water supplies and drainage systems for Montgomery and Prince George counties, which abut on the District of Columbia. The commission is authorized to negotiate with the proper authorities of the District with reference to the connection of the proposed county sewerage systems with the sewerage system of the District.

For Research Work.—Another step forward will be taken in September by the Johns Hopkins Medical School, when the immunologic department of the school will be opened. This department will occupy the fifth floor of the new Hunterian laboratory building, which is in the course of construction. The medical school has had an immunologic department in the past, but it has never been developed in the manner in which those in charge of it desired. The main purpose of the building will be to afford opportunities for bacteriologic study, particularly in connection with postmortem examinations.

To Aid Child Welfare.—The Baltimore Child Welfare Circle was formally organized, April 3, under the auspices of the Maryland Branch of the National Congress of Mothers and Parent-Teacher Associations, which set aside the day as "Fathers' and Mothers' Day." Preceding the business meeting a lecture was given by Dr. Herbert B. Davis, of the Pittsburgh Training School for Teachers, on "The Function of Child Welfare Organizations." In the evening a second meeting was held for fathers only. Dr. Davis gave an address on "American Parenthood," in an effort to make the men realize their responsibilities. Nearly 200 members have been enrolled in this chapter, and it is expected regular meetings and the routine work will be entered on shortly.

MASSACHUSETTS

Antivaccination Bill Killed.—In the House of Representatives the annual debate on the bill to permit unvaccinated children to attend the public school occurred and the measure was rejected by a vote of 120 to 103.

Health Unit Opened.—The first health unit to be established by Health Commissioner Mahoney was officially opened, March 26, at 17 Blossom Street, West End. Associated with the local health board in the conduct of the unit are the Women's Municipal League, Federated Jewish Charities, Milk and Baby Hygiene Association; Instructive District Nurses' Association; West End Mothers' Club, and Boston Dispensary.

Personal.—Dr. Joseph J. O'Brien, Dorchester, has been appointed medical inspector of the public works department, succeeding Dr. Arthur H. Davison.——Dr. William Hall Coon, formerly of the Massachusetts State Board of Health, has been placed in charge of the Department of Industrial Relations, recently established by the Fish Rubber Company, Chicopee Falls. The new department will provide for the safety and health of the employees; the increasing and betterment of hospital service, and free health insurance to all employees.

MISSOURI

Personal.—Dr. George L. McCutchan, Jefferson City, prison physician, is suffering from septicemia due to an infection received while dressing a wound for a convict.——Dr. Stephen D. Reynolds, Gower, has been appointed a member of the staff of State Hospital No. 2, St. Joseph, succeeding Dr. Calvin L. Woolsey, resigned.

Diplomas Sold.—An applicant for license to practice medicine, August Steinlage, is reported to have been arrested recently on complaint of Dr. John A. B. Adcock, Jefferson City, secretary of the Missouri State Board of Health, for fraudulently claiming to be a graduate of the Marquette University School of Medicine, Milwaukee. It appears that several diplomas bearing the name of this school have been sold recently by some "degree merchants," who are said to be conducting a "medical course" in Chicago. The officers of the medical school stated that Steinlage had never been a student there.

NEW MEXICO

Typhus Under Control.—The outbreak of typhus at Santa Rita is now reported to be under control. The first patient is improving; the second died.

Personal.—Dr. Fred L. McDaniel, U. S. I. S., Crownpoint, has resigned from the Indian Service to accept a position on the staff of the Kansas State Hospital, Osawatomie.——Dr. John W. Colbert, Albuquerque, has returned after seven months' hospital work in France.

NEW YORK

Personal.—Dr. Daniel F. Mathews has been elected health officer of Syracuse.——Drs. Walter A. Cowell and Edward Torrey have passed the competitive civil service examination for the superintendency of the Olean Tuberculosis Hospital.

Special Course for Health Officers.—Twenty health officers have been enrolled for the course of special study instituted by the College of Medicine of Syracuse University. They have all completed the prescribed reading course and are now engaged in the laboratory work and instruction, which will continue until June 10. At the end of the course an examination will be held and certificates of standing will be issued.

New Quarters for Laboratories.—At a meeting of the council of the new commission form of government of Buffalo, a resolution was adopted whereby the bureau of laboratories of the department of health of that city will be removed from their present cramped and inadequate quarters and established in a three-story stone and brick structure, formerly occupied as a police precinct station house. The building is of modern architecture and most suitably adapted for laboratory activities.

New York City

Harvey Society Lecture.—The tenth lecture of the Harvey Society series was delivered April 8 by Prof. Stanley R. Benedict of Cornell University on "Uric Acid in Its Relations to Metabolism."

Medical College Honors Oldest Graduate.—The trustees of the New York Medical College and Hospital for Women gave a luncheon at Delmonico's, April 8, in honor of the fiftieth anniversary of the graduation of Dr. Anna Manning Comfort, Syracuse, the only surviving member of the first class. Dr. J. Perry Seward, president of the faculty, presided. Dr. Comfort was the first woman to practice medicine in Connecticut.

Personal.—Dr. Louis B. Bisch has been appointed instructor in psychology for the police department and Dr. Eugene C. Rowe, criminologic examiner.——Dr. William Seaman Bainbridge gave an illustrated lecture on "Some Glimpses of the War" at the Madison Avenue Baptist Church, April 4. ——Dr. William H. Park recently gave an address before the Johns Hopkins Medical Society, Baltimore, on "Active Immunization Against Diphtheria."

The Question of Federal Quarantine.—The nomination of Assist. Surg.-Gen. Leland E. Cofer, U. S. P. H. S., as health officer of the port of New York, is still held up by Senator Sage, chairman of the state finance committee, who disapproves bringing a federal officer to the station on a temporary appointment. Senator Sage himself is reported to be increasingly favorable to the transfer and the assembly has already indicated its approval of the step.

A New Publication.—The health department announces that it has established a new publication known as the *Monthly Drug Bulletin*. In the first number of the publication are the names of many hundreds of proprietary preparations whose formula has been registered with the department of health in compliance with the requirements of the Sanitary Code. Other items pertain to the sale of wood alcohol, the recent epidemic of grip, the sale of spurious aspirin and neosalvarsan, and to other matters of special interest to the pharmacist.

Opposition to Pay Clinics and Hay Bill.—At the last meeting of the Medical Society of the County of New York, March 27, resolutions were adopted expressing disapproval of the proposed plan of Mount Sinai Hospital to open a night clinic for the medical and surgical treatment of persons on the general basis of $1 a visit. It was pointed out that this method could ultimately be extended to every hospital in the city and take a large section of the general and special practice and place it in the hands of medical institutions. At the same meeting resolutions were passed condeming the provision of the Hay Bill, which would abolish the Medical Reserve Corps of the Army, and advocating the raising of the strength of the Medical Corps of the Army so that there shall be, in times of peace, ten surgeons to each 1,000 men.

City College Plans Municipal Service Courses.—President Mezes of the College of the City of New York, recently appointed a committee to make a municipal service survey with a view to establishing courses for the purpose of preparing students for civil service positions. This committee has presented recommendations for the organization of such courses. There will be full cooperation between the city departments and the college. Under the auspices of the mayor's committee and the College of the City of New York, a course in community medicine will be offered which will include the following: Organization for health; infant welfare as an index to urban health; the child in the city schools; the worker's health and the city's responsibility; the city as a teacher and regulator of personal hygiene; special problems of hygiene in social life; social economic aspects of public health problems, and kindred subjects that may come up. Dr. Donald B. Armstrong, director of the Department of Social Welfare, New York Society for Improvement of the Condition of the Poor, will conduct the course.

Denal Hygiene for Schoolchildren.—A bill was passed by the legislature which has just been signed by the governor which provides that:

> Any dental dispensary or infirmary legally incorporated and registered by the regents, and maintaining a proper standard and equipment may establish for women students a course of study in oral hygiene. All such students upon entrance shall present evidence of attendance of one year in high schools and may be graduated in one year as dental hygienists, upon complying with the preliminary requirements to examination by the board, which are:
>
> A. A fee of five dollars.
>
> B. Evidence that they are at least 20 years of age and of good moral character.
>
> C. That they have complied with and fulfilled the preliminary and professional requirements and the requirements of the statute.
>
> After having satisfactorily passed such examination they shall be registered and licensed as dental hygienists by the regents under such rules as the regents shall prescribe.
>
> Any licensed dentist, public institution or school authorities may employ such licensed and registered dental hygienists. Such dental hygienists may remove lime deposits, accretions and stains from the exposed surfaces of the teeth, but shall not perform any other operation on the teeth or tissues of the mouth. They may operate in the office of any licensed dentist, or in any public institution or in the schools under the general direction or supervision of a licensed dentist, but nothing herein shall be construed as authorizing any dental hygienist performing any operation in the mouth without supervision. The regents may revoke the license of any licensed dentist who shall permit any dental hygienist operating under his supervision to perform any operation other than that permitted under the provisions of this section.

NORTH CAROLINA

Personal.—Dr. Everett F. Long, Denton, has been elected whole-time health officer of Davidson County.——Drs. William R. McCain and Lemuel E. Guin, Waxhaw, are ill in the Charlotte Sanatorium.——Dr. Watson S. Rankin, Raleigh, secretary of the state board of health, will deliver five addresses at the School for Health Officers to be held in Topeka, Kan., April 24 and 29.

Hospital Notes.—A new wing, to cost about $20,000, is to be added to the Clarence Barker Memorial Hospital, Biltmore. The new addition will accommodate eighteen patients, will have six new private rooms, each with a bath, a new operating room and a diet kitchen.——Dr. William T. Rainey, Badin, is in charge of the new hospital which the American Aluminum Company is building.——St. Peter's Hospital, Charlotte, announces that it has completed arrangements for the operating of a maternity department in charge of Dr. Charles H. C. Mills.——A new hospital is being built in Burlington.

OHIO

Academy Rejects City's Offer.—The Toledo Academy of Medicine at its meeting, March 14, rejected the proposition of the city of Toledo to care for charitable medical cases for $6,120 per year.

Personal.—Surg. Clarence W. Wille, who recently resigned from the United States Public Health Service, has turned over his office to his successor, Surg. John M. Holt. Dr. Wille will take up private practice in Cleveland.——Dr. Dallas K. Jones, who has been practicing in Canal Fulton for thirty years, has moved to Wooster.

Vital Statistics for 1915.—The death rate of Ohio for 1915 was 12.98 per 1,000 as opposed to 12.94 per 1,000 for the previous year, while the birth rate was 20.02 per 1,000 as opposed to 20.25 the previous year. During the year there were 101,905 births and 66,077 deaths reported. The greatest number of deaths, 7,766, was due to organic heart disease; tuberculosis comes next with 6,663; pneumonia with 6,255, and cerebral hemorrhage with 5,601. There was an increase in automobile accidents, as compared with the previous year, from 187 to 304. Nineteen per cent. of the deaths were in children under 5 years of age. Intestinal diseases caused 2,301 deaths in infants under 2 years of age as compared with 2,790 from the same cause in 1914.

Cincinnati

Contract for Medical College Awarded.—After a detailed examination of bids for the construction of the new Medical College Building toward which Mrs. Mary Emory contributed $250,000, the building committee and the commissioners of the Cincinnati General Hospital awarded the contract to a St. Louis bidder for $250,000. The building is to be fireproof throughout, of brick and reenforced concrete, three stories in height with a basement, a north and south wing, is to be 60 feet wide and 125 feet deep and the entire front is 300 feet. The central wing will contain an auditorium with a seating capacity of 500. The committee still has $255,000 obtained by donations, for equipment and interior furnishing.

PENNSYLVANIA

Personal.—Dr. William Magill Schultz recently returned to Philadelphia after six years' work as a medical missionary at Tsinan, Shantung, China.——Dr. Francis J. Meek, Shamokin, was seriously injured in a collision between his buggy and an automobile, March 29.

Pennsylvania's Health Record.—The annual report of the state commissioner of health which has just been handed to the governor shows that the year just past has been the healthiest in the history of Pennsylvania. That is to say, that in proportion to its population, the death rate has been lower than ever before, and the state has been freer from epidemics and contagious diseases.

Philadelphia

Public Lecture.—A public lecture will be given under the auspices of the College of Physicians of Philadelphia, April 15, by Surg. Archibald M. Fauntleroy, U. S. Navy, on "The Dangers and Duty of the Hour."

Vaccination Rule Upheld.—The compulsory vaccination rules of the school board were upheld, March 31, by Judge Schumaker of the Quarter Sessions Court, who dismissed, and sustained a fee of $3 and costs imposed on a defendant for refusing to have his child vaccinated.

Personal.—Dr. Richard R. Spahr has resigned from the Philadelphia General Hospital to serve in the American Ambulance at Paris. He will be accompanied by Dr. Lever F. Stewart of Clearfield.——Dr. Charles S. Hirsch has been elected genito-urinary surgeon to the Mt. Sinai Hospital.

Plans for Triple Merger of Medical Colleges.—Plans for the consolidation of the Medico-Chirurgical College and the University of Pennsylvania are nearing completion and there have been meetings between committees from the boards of trustees of the Jefferson Medical College and the University of Pennsylvania for the purpose of considering a triple merger.

City's Phenol Production.—As a result of the war the production of phenol (carbolic acid) in the United States has grown from less than 2,000 tons to about 12,000 tons a year, and it is given as a fact by chemists that, in the northeastern part of this city, there is one concern producing at least one quarter of the output of the whole world. In other words, this one laboratory, built since the war began, is producing more than 3,000 tons a year, on the average of 10 tons a day.

The Samuel D. Gross Prize.—The Philadelphia Academy of Surgery announces that essays in competition for the Samuel D. Gross prize of $1,500 will be received until Jan. 21, 1920. The conditions stipulate that the prize "shall be awarded every five years to the writer of the best original essay not exceeding 150 pages octavo in length, illustrative of some subject in surgical pathology or surgical practice, founded on original investigation, the candidates for the prize to be American citizens." Further information may be obtained by writing to the trustees of the Samuel D. Gross Prize, 19 South Twenty-Second Street, Philadelphia.

An Appeal for Surgical Instruments.—The Surgical Advisory Committee of the French War Relief, at 1428 Walnut Street, Drs. J. William White, William W. Keen and Joseph Leidy, have sent out an urgent appeal for surgical instruments for use in the smaller hospital centers in France. During the past year these small units, away from the large centers of population, have been a constant source of concern among those in close touch with the work of the medical department. In many cases the surgeons found the supply of surgical instruments totally inadequate. It is of these hospitals that the French War Relief has been particularly watchful. During the past year the medical profession throughout the United States has been very generous in responding to the request of the French War Relief Committee, but the demand still grows and is urgent owing to the increased requests for greater accommodation. After a recent battle, it is reported that operations were performed with ordinary carving knives. All donations, either in the form of supplies, instruments or money, should be sent to the French War Relief, 1428 Walnut Street, or to any of the committee.

WISCONSIN

Personal.—Dr. Gerhard A. Bading was defeated in his fight for the mayoralty of Milwaukee by the Socialist candidate, Daniel A. Hoan.——Dr. Sylvester J. Driessel, Barton, was operated on for appendicitis in St. Agnes' Hospital, Fond du Lac, March 21, and is reported to be doing well.——Dr. Henry Wahle, who has practiced in Marshfield for nearly twenty years, has disposed of his practice to Dr. Victor A. Mason and has started for the West.

Midnight Antituberculosis Meeting.—A midnight antituberculosis meeting for shopmen was a unique feature of the two-day health institute held in South Milwaukee, March 27 and 28, by the Wisconsin Antituberculosis Association, assisted by the extension division of the University of Wisconsin. Using a lathe as a lecture platform Theodore Werle of the Wisconsin Antituberculosis Association addressed an audience of 200 members of the night shift at the Bucyrus works.

The Typhoid Situation in Milwaukee.—Since January 1, there have been 360 cases of typhoid fever in Milwaukee believed to have been caused by impure drinking water, and from these cases thirty-one deaths had resulted up to April 1. On April 3, ten new cases were reported.——Suit has been filed against the city for $10,000 damages by Mr. and Mrs. Charles Christie, who allege that their son Julius died, March 21, from typhoid fever caused by the drinking of the city water; Mr. and Mrs. Andrew Likowsky have sued for $10,000 on account of the death of their son Ignatz; Mr. and Mrs. Herman Graffinus have sued for a like amount for the death of their son Gilbert from typhoid fever, and the widow of Gustav Stibb, who died from typhoid, March 13, has sued the city for $10,000 damages for criminal carelessness.

CANADA

Medical Corps Dinner.—The officers of the Toronto Army Medical Corps held their annual dinner recently. The principal speakers were two members home on furlough from the front, Lieut.-Col. Perry G. Goldsmith and Capt. Thomas H. McKillip.

Nova Scotia Needs Physicians.—On account of the drain made by the war on the medical men of Nova Scotia, the province is now suffering from a lack of physicians, and the premier has introduced a bill extending the privilege of practicing medicine to men who have studied in medical schools for four years, although not registered in the province.

Personal.—Dr. George T. McKeough, Chatham, Ont., has been appointed a major in the Canadian Army Medical Corps.

——Dr. Rowena G. D. Hume has been elected president of the Women's Medical Association, Toronto.——Dr. W. Berkeley Stark, Toronto, sailed for England, March 11. He has been appointed on the Ontario Medical Hospital staff at Orpington.

GENERAL

Result of Red Cross Seal Competition.—The committee consisting of Philip P. Jacobs and C. M. DeForrest, New York, and Miss Mabel T. Boardman and Ernest P. Bicknell, New York, appointed to act as judges in the American Red Cross Christmas seal design competition, has awarded the first prize of $100.00 to Fred C. Beaumont of New Bedford, Mass.; the second prize of $50.00 to R. C. Stedman, Washington, D. C.; the third prize of $25.00 to Grace L. Newcomb, Washington, D. C.; the fourth prize of $15.00 to Alvin R. Miesner, Washington, D. C., and fifth prize of $10.00 to E. W. McRae, Washington, D. C.

Rockefeller Foundation Payments.—The Rockefeller Foundation announces a list of payments to unaffiliated organizations during 1915. Among these payments of special interest to the medical profession are the following: Committee on the Prevention of Tuberculosis, $500.00; Eugenic Field Workers, $2,700; Eugenic Record Office, $1,350; Hospital Saturday and Sunday Association, $500.00; National Association for the Study and Prevention of Tuberculosis, $500.00; New York Milk Commission, $4,000; Rockefeller Institute for Medical Research, for corporate purposes, $8,854.17, and Rockefeller Institute for Medical Research, for buildings, $570,559.71.

Information Wanted Regarding Dr. Burnett.—Mr. S. E. Burnett, 834 Brooklyn Avenue, San Antonio, Texas, offers a reward of $50 for definite information that will lead to the location of his son, Dr. E. J. Burnett, who is 37 years old, 5 feet 6 inches in height, weighs 160 to 170 pounds, has dark hair, has a scar on the forehead in the edge of the hair, has brown eyes, wears a mustache and goatee, has a military walk, is a habitual smoker of cigarettes and cigars and has a hibit of clearing his throat. Dr. Burnett disappeared from Kansas City in December, 1912, was treated in St. Louis City Hospital in July, 1913, and disappeared from Sikeston, Mo., in November of the same year, and was last seen in San Francisco, Portland, Ore., and Seattle in the fall of 1914.

Practice Rights of Inactive Medical Reserve Corps Officer.—The question whether appointment as first lieutenant in the Medical Reserve Corps, U. S. Army, inactive list, confers the right to practice medicine in New York State was decided on March 18, when the Appellate Court reversed a judgment obtained in the Municipal Court by Dr. James H. Haberlin against Paul W. Englehart for medical services on the grounds that Dr. Haberlin had not the right to practice medicine in New York by reason of having been appointed first lieutenant, Medical Reserve Corps, inactive list, on March 25, 1915. The judge decided that Dr. Haberlin's duties as a medical officer do not begin until he is called to active duty by the government.

Red Cross Base Hospitals.—Col. Jefferson R. Kean, M. C., U. S. Army, recently assigned to duty with the American Red Cross and appointed director general of military relief of the Red Cross, has announced a plan for organizing base hospitals in different parts of the United States. New York, Boston, Baltimore, Cleveland and Rochester, N. Y., are the points at which this work will be initiated. Base hospital units, mobile in character so that they can be transported at short notice from the civil hospital in which they are organized to any place where they may be needed, are now being organized in these cities, and the work will shortly be extended to other cities where the spirit of preparedness and patriotism is sufficiently in evidence to insure the equipment of these units without great difficulty and delay. These units must be inspected once a year by a medical officer of the service for which they are enrolled and when called to duty, active service, the Red Cross loses all administrative authority and they pass with their entire equipment into the national service with their professional specialists, nurses, cooks, attendants, administrative personnel and complete equipment.

Examination for Navy Medical Corps.—The next examination for admission to the Medical Corps of the Navy will be held on or about June 16 at Washington, D. C., Boston, New York, Philadelphia, Norfolk, Va., Charleston, S. C., Great Lakes (Chicago), Mare Island, Calif., and Puget Sound, Wash. Applicants must be citizens of the United States, between 21 and 30 years of age, graduates of reputable medical schools and must apply for admission, applications being in the handwriting of the applicants, and must be accompanied by letters or certificates from two or more persons of good repute testifying from personal knowledge as to good habits and moral character; a certificate that the applicant is a citizen of the United States, a certificate of preliminary education, graduation from an accepted high school or an accepted equivalent; a certificate of medical education giving name of school and day of graduation and certificate of hospital service or special educational or professional advantages. These applications should reach the Bureau of Medicine and Surgery, Washington, D. C., not later than June 5. Full information with instructions how to submit formal application, may be obtained by addressing the Surgeon-General of the Navy, Navy Department, Washington, D. C.

Bequests and Donations.—The following bequests and donations have recently been announced:

Holy Family Hospital, Society of St. Vincent de Paul, and St. Mary's Hospital, New York, each $2,000, by the will of John MacNamee.

St. Mary's Free Hospital for Children, New York, $3,000, the proceeds of a benefit recently given at the home of Mrs. James Speyer.

University of California for the equipment of the new 216-bed University Hospital now being built in San Francisco, Mrs. James Moffitt, "an alumnus," and Mrs. Alexander F. Morrison, San Francisco, each $5,000; William H. Crocker, $2,616.50; Wallace M. Alexander and "a friend of the University," each $2,000; M. Ohlandt, $1,500; Charles W. Merrill and D. C. Jockling, each $1,000 and the children of the late F. W. Dohrmon, $500.

The Charles T. Miller Hospital, Inc., St. Paul, $1,500,000, by the will of Mrs. Martha A. Miller.

Sisters of Charity of St. Vincent de Paul, for the formation of a branch of St. Vincent's Hospital at Stanford, Dutchess County, N. Y., for the treatment of sufferers from cancer, more than $300,000; St. Joseph's Hospital, Yonkers, $10,000; St. Lawrence Hospital, German Hospital, Catholic Institute for the Blind and the Knapp Memorial Eye Hospital, New York, each $5,000, by the will of Mrs. Mary Halloran.

Dr. William E. Young, New York, $10,000, by the will of Mrs. Susan Warner Wolff.

Protestant Episcopal Hospital, Long Island City, $1,000, by the will of Anna A. Smith.

The construction and maintenance of a city hospital for Shenandoah, Iowa, by the will of Mrs. Henry Hand.

German Hospital, Philadelphia, a contingent bequest of $10,000, by the will of Charles J. Braun.

Cleveland Medical Library, $25,000, by the will of Dr. Benjamin L. Millikin, Cleveland.

Lakeside Hospital, Cleveland, $250,000; Charity and St. Alexis' hospitals and the Western Reserve University School of Medicine, each $50,000; Babies' Dispensary and Hospital and Tuberculosis Free Dispensary and Maternity Hospital, each $25,000, by the will of Robert R. Rhodes, Cleveland.

FOREIGN

Child Welfare Congress in South America.—The first Congreso Americano del Niño is to convene at Buenos Aires next July. There are to be seven sections and all the American states are to send delegates. The congress is open to all interested in child welfare on payment of the fee of $11.36 Argentine money (about $5).

To Clean up Buenaventura.—The Colombian government has requested Dr. Edward P. Beverly of the Colon Hospital, Cristobal, C. Z., to undertake the work of cleaning up Buenaventura, which is known as the pest hole of Colombia. The two great problems in the sanitation of the town are the lack of proper sewerage and the absence of an adequate water supply.

WAR NOTES

French Hospital Efficiency.—In a recent lecture before the French Institute, Dr. Jacques Bertillon, director of the medico-surgical statistics of the French army, asserted that the mortality of sick and wounded had been reduced to 18 per 1,000. Earlier in the war the mortality had reached 53 per 1,000.

Aid Sought for Armenians.—Dr. C. D. Ussher, a medical missionary working under the American Board of Commissioners for Foreign Missions in Armenia, spoke in Pittsburgh, March 31, on "Atrocities Committed on Armenians by the Turks" and urged the organization of an auxiliary committee to the American Committee for Armenian and Syrian Relief.

Turkish Government Welcomes Help.—The American Red Cross has received a cablegram from its representative in Constantinople to the effect that the Turkish government has changed its policy and now welcomes help, and through the Minister of the Interior authorizes the American Red Cross cooperating with the Red Crescent to conduct relief work for civilians of all races. Great suffering prevails at Constantinople and the suburbs along the sea of Marmora, Adrianople, Bruss and Smyrna, where hundreds are said to be dying of starvation with no relief in sight. On receipt of this cablegram the Red Cross appropriated $10,000 to meet the emergency.

LONDON LETTER

LONDON, March 20, 1916.

The War

THE HEALTH OF THE ARMY

Mr. Tennant, the undersecretary for war, has made in Parliament a very satisfactory report on the health of the army and the provisions made for the treatment of the wounded. The incidence of disease in France is low. There is an entire absence of any epidemic. We owe thanks to the many medical and scientific men for their energy and action in this matter, and particularly in the prevention of disease. The Sanitary Committee has done splendid work, especially in Gallipoli, where they have the difficult task of counteracting tropical diseases. The outbreak of dysentery and diarrhea caused great anxiety. There is no anxiety now in relation to the health of the troops, either at Saloniki or in Egypt. At home large convalescent hospitals have been established, and in the military hospitals here men are being replaced by women. Fourteen hundred women have already asked for general service. For this we have to thank the Red Cross. Between 5,000 and 6,000 women who have been organized in voluntary aid detachments are now doing regular nursing work in hospitals. In order to obtain medical officers under conditions least harmful to the needs of the civil population and the great civil institutions, the government has established a representative body of physicians in conjunction with the national health commissioners and the Local Government Board. Physicians have come forward in the most admirable manner to meet the needs of the state. Highly successful measures have been taken against the gas attacks of the enemy. The national health commissioners have taken up the question of the early treatment of tuberculous patients removed from the army. As to the treatment of the wounded, Sir Frederick Treves, who went through the South African War and the Russo-Japanese War, has said: "Those who are familiar with the medical dispositions in the South African War will find in this campaign an advance in the medical services so great and so wide extending as to amount to an actual revolution. Not only has the sick and wounded soldier never been so well cared for in any campaign as in the present, but it is difficult to suggest in what way his welfare could be further promoted."

Sir Frederick Treves takes a couple of illustrations: "We should note in the first instance such an advanced dressing station as that at Les Brebis. The place is a mining village well within range of the enemy's fire; indeed, some twenty shells had fallen into the area on the morning of our visit. The hospital is a building which was used by miners as an entertainment hall. This hall makes an excellent ward provided with every necessary detail. Attached is a small, carefully equipped operation room, where operations of an urgent nature—such as the arrest of hemorrhage—could be carried out. Here also wounds may be cleansed and redressed, fractures more comfortably adjusted, and injections of antitetanic serum given. Close at hand were two dugouts into which patients could be taken if the shelling threatened the building. The whole station was simple, efficient, and exactly equipped for its limited purpose. There was nothing lacking and yet nothing superfluous, and the feature of extreme mobility was kept prominently in mind." Of the clearing stations he says: "From a surgical point of view they represent the most important items in the general scheme for the treatment of the sick and wounded. They are as near the front as they can be placed, they are readily accessible from the advanced dressing stations, while they are in direct touch with the base either by a line of rail or by a good main road. The tents are well warmed by stoves and well lit by electric light, while the operating theater is as good as any found in a civil hospital of its size. The huts at Remy and the wards at Bailleul could compare with the wards of any good civil hospital in England. To these clearing stations wounded men can be brought in a few hours. In the severest gunshot wounds prompt attention is the main factor in the saving of life and limb. The patient not only finds himself in an operating theater, equipped with the best and most recent appliances, but he is in the hands of an operating surgeon of the first order. At the same time the patient has the advantage of the regular and frequent visits of a consulting surgeon of European reputation. Moreover, the nursing in these stations is of the highest type, being carried out by the army nursing sisters. A great number (and often the greater number) of the patients arrive at night, and over and over again, operations are carried out the whole night through. At Lapugnoy, with its 376 beds, no less than 2,000 casualties were dealt with in one day. At the clearing station at Bailleul, the vast number of 61,000 sick and wounded have passed through the hospital since it was opened, while the number of major operations has reached to over 1,000."

In one of the minor fields of operation, Mesopotamia, the same claims cannot be made. Serious deficiency in the number of the medical corps has been disclosed. The medical arrangements are not under the control of the War Office but of the Indian government. A letter was read in the House from one of the wounded who wrote: "I must consider myself fortunate to have arrived at Basra, where some medical aid was available, without getting a septic wound. The lot of the badly wounded during the evacuation stage from the field to the base at Basra is anything but joy. The five or six days spent on the paddle steamer down the Tigris are not to be forgotten in a hurry—two hundred, or possibly more, lying anyhow on the deck, with only one medical officer and practically no medical equipment. However, I understand that proper hospital steamers are now being sent out."

A Memorial to Florence Nightingale

It is appropriate that the services of the woman who originated trained nursing of the wounded should be commemorated during the world's greatest war. The queen has unveiled a memorial in the crypt of St. Paul's Cathedral on the wall leading from Nelson's tomb to Wellington's. The memorial is a low relief in white marble, representing Florence Nightingale in half length, wearing the familiar cap, bending over a wounded soldier, to whose lips she is holding a cup. The marble is surrounded by a rich alabaster frame, the inscriptions on which are, above the plaque, "Blessed are the merciful," and below it, "Florence Nightingale, O.M.; born May 12, 1820, died August 13, 1910." The ceremony was of the simplest. There were present representatives of the army and the British dominions nursing services. The archbishop of Canterbury delivered a short address.

BERLIN LETTER

BERLIN, March 7, 1916.

Personals

Professor Leubuscher, medical referee of the grand duchy of Sachsen-Meiningen, died in Meiningen, February 28, aged 57. He achieved distinction because of his activity in the organization of the school inspection work, not only for the public schools but also for the higher schools, although the latter is rather a restricted activity in Germany. Early in his career he was assistant at the pathologic institute in Jena. In 1885 he qualified as a privat-docent in internal medicine and state medicine. In 1892 he was appointed professor extraordinary.

Prof. Julius Wohlgemuth, assistant in the pathologic institute of the University of Berlin, has been appointed to succeed the late Prof. Walther Loeb as director of the chemicophysiologic division of the Rudolf-Virchow Hospital.

Exchange of Wounded Prisoners

A meeting of the German-Swiss committee for the exchange of wounded French prisoners was held in Berlin, March 1, under the chairmanship of the director, Colonel Bohny. It will be remembered that the French and German authorities agreed to allow wounded prisoners to be removed to Switzerland. Swiss medical officers will visit the German and French prison camps and select such prisoners as are affected by this agreement. The exchange is based on equality of numbers.

Infectious Diseases

From time immemorial Russian Poland has been the seat of epidemics of infectious diseases of every kind, and hence the work of the department was especially directed toward the prevention of the spread of these diseases. Notification must be made of all infectious diseases, including cholera, typhoid, typhus, smallpox, diarrhea, epidemic cerebrospinal meningitis, scarlatina and diphtheria. Notice must also be given of all suspicious cases in which the diagnosis has not been made definitely. All corpses must be examined by physicians or a field inspector or orderly so that sources of contagion and infection will be discovered promptly even when the case terminated by death was not reported. The civil government has established a bacteriologic laboratory in Lodz. Assistance is also given by the bacteriologists of the army medical corps in Warsaw, Thorn and Bialystok as well

as by the Prussian laboratories in Beuthen, Breslau and Posen. The field inspectors have rendered very effective service in locating cases of infectious diseases, and they have also been trained to vaccinate. Two hundred and fifty isolation hospitals or stations have been provided to take care of all these patients. This does not include the hospitals already established. The disinfection service has also been perfected. German district physicians and disinfectors formed the nucleus of this service. By means of directions printed in Polish, instruction was imparted to local physicians. A school of instruction was established in Lodz, and all disinfectors are sent there for further instruction. Disinfection apparatus was constructed on the ground or imported from Germany. Smallpox was perhaps the most prevalent infectious disease. In peace times the annual number of cases in this district under the Russian government was about 11,000. The first step taken to combat this disease was to vaccinate everybody. On a certain day each week a sort of "vaccination bee" was held, and certain people were vaccinated. Every schoolchild that had not been vaccinated successfully or that was not immune, because of not having had the disease, was vaccinated during the year 1915. Whenever a case of smallpox appeared, a wholesale revaccination of every one in the vicinity was made. About 600,000 persons have been vaccinated, and the result is that the smallpox incidence has been reduced 60 per cent.

Typhus in epidemic form made its appearance only in Alexandrow and in Warsaw. The patients and all suspicious cases and carriers were isolated, but the most effective measures were those directed toward the elimination of body lice as carriers. In consequence there has been practically no further spread of the disease. The disinfection was done in six large military disinfecting stations and twenty smaller local stations. A floating disinfecting station on the Vistula has rendered good service. Suitable measures were also taken to prevent the carrying of the disease across the border into Germany. These consisted, in the main, in freeing the bodies and clothing of workmen and others from lice. The shipping interests were similarly disinfected. At Plock and Wloclawek inspection stations were established, and here all vessels and water transports and passengers are examined thoroughly and disinfected. Similar measures were taken to prevent the spread of cholera, although an agreement between Russia and Germany had been made in 1907 which made it possible to prevent the carrying of cholera across the border. The usual sanitary measures were put into force, including the most careful and thorough examination and disinfection of streets, houses, toilets, garbage and sewage disposal. In Lodz typhoid was prevalent, and on investigation it was found that the stools of these patients were not properly disinfected, nor was the proper disposition made of them. Correction of these defects immediately lowered the morbidity of typhoid. The water supply was also investigated. Lodz has 10,000 wells, of which only 7,000 had been examined. Existing wells and other sources of water supply are being examined, and many new wells are being driven.

Medicines and bandage supplies have been imported from Germany. Food supplies are inspected frequently by the local authorities, as well as the places where they are offered for sale. A special department having charge of this work has been established in Lodz. Two chemists collect the material and make the examinations. Every effort is being made to have an effective supervision of all foods, especially milk and meat, and it may be said that the people of the occupied territory are now cooperating to a great extent, as is shown by the results obtained.

PARIS LETTER

PARIS, March 23, 1916.

The War

PROTECTION FURNISHED BY THE METAL HELMETS WORN BY SOLDIERS

To what degree has the metal helmet adopted by the French army fulfilled the purpose for which it was intended? Dr. B. Roussy, from study of the official records of wounds of the war, has reached the following statistical conclusions, which he has just reported to the Académie de médecine: In July, 1915, head wounds formed 8.7 per cent. of the total number of wounds; in August the proportion was 10 per cent., in December, 20 per cent., and in January, 1916, 14.5 per cent. Roussy concludes that, while apparently head wounds are now more numerous than they formerly were, the reason is that formerly the greater number of such wounds were fatal, while today the number of recoveries from wounds in the head has become much greater. The second part of Roussy's report shows the difference in severity between head wounds sustained before the wearing of the helmet became general and those received later. In many cases, the projectile indents but does not pierce the metal headpiece, producing only a contusion of the bone or perhaps merely grazing the exterior surface of the skull. In other cases, the helmet has deflected the projectile, thus making the wound far less serious.

Roussy and others believe that wearing the helmet gives the soldiers greater confidence, which considerably increases their value as combatants. He suggests, consequently, that, in addition to helmets, the soldiers should wear protective devices covering the vital organs—the heart and the abdominal viscera.

THE AUXILIARY HOSPITALS

The undersecretary of the military medical service is engaged in restoring to their original purposes, so far as possible, a certain number of buildings (especially school buildings) which had been transformed into hospitals. January 15, the medical service occupied 386 public school buildings, 244 private school buildings and 298 hotels. Of the hotels, 219 were requisitioned, 70 were occupied by agreement with the owners and 9 were offered free. Of the 290 hotels thus devoted to the uses of the medical service, 100 are situated in the *stations thermales* such as Vichy, Châtel-Guyon, Royat, la Bourboule, and Mont-Doré, or at Cannes, Nice, Mentone or in the region of Biarritz.

AUTHORIZATION OF THE SALE OF SKIMMED MILK

Milk is constantly becoming scarcer. The permanent committee of agriculture, which discussed this problem at its last meeting, has therefore concluded that it would be desirable to allow skimmed milk to be sold in commerce for the use of adults on condition that it contains not less than 15 per cent. of fat (up to the present a minimum fat content of about 33 per cent. has been required). The committee has indicated that this skimmed milk ought not to be given to infants and that whenever such milk is sold, not directly to consumers from the producers, but through middlemen, it should be pasteurized. To avoid confusion of skimmed milk with unskimmed milk and the frauds which might thus arise, the committee has advised that this product should be sold only in containers bearing in conspicuous letters the words "skimmed milk" and the directions, "not to be fed to infants."

Professors Chauveau and Mossu assert that skimmed milk has a caloric value equal to more than one-half that of unskimmed milk.

Measures Against Depopulation

A governmental study of the question of depopulation has been undertaken, and, in accordance with the report of the late Professor Lannelongue (THE JOURNAL, July 16, 1910, p. 230), a methodical program of study has been adopted. The Chamber of Commerce of Paris has just addressed to the secretaries of the departments in whose province the matter falls a remarkable report by one of its members, M. E. Henry. The report mentions that during the period from 1903 to 1913, there were two years in which deaths exceeded births. In 1907 the excess of deaths was about 19,071, and in 1911 it was 34,869. For the other years, the excess of births was slight. In 1903 the maximum figure of excess occurred; then the births exceeded the deaths by only 73,016. In Germany and Austria, on the other hand, the excess of births is constant and varies in the first-named country from 740,000 to 910,000 and in the second country between 237,000 and 342,000.

The Chamber of Commerce of Paris adopted the conclusions of this report, and passed a resolution: (1) that all the resources of literature, art and the press be utilized to inform the nation of the grave peril which the lowering of the birth rate produces in France and to encourage ideas and customs necessary to combat this lowered birth rate; (2) that Parliament introduce, as soon as possible, the judicial, administrative, fiscal and financial reforms necessary to check depopulation and especially that the various problems outlined to the Senate in Professor Lannelongue's report be studied and the remedies applied without delay; (3) that the laws on the employment of apprentices in shops where adults are employed be revised; (4) that a study be made of measures to combat alcoholism and the necessary laws passed, (5) that the aid given to large families cease to be regarded as charity and be sufficiently increased to be a substantial encouragement to those who have added to the riches of the country by building up families.

The Foundation of an Institution for the Prophylaxis of Syphilis

M. Frank J. Gould has sent to M. Chautemps, senator from the department of Haute-Savoie, a sum amounting to 250,000 francs (about $50,000) to be used against syphilis and kindred diseases. This has been used to found an association known as the Institut prophylactique intended to work for the progressive extinction of these diseases both by the direct treatment of individuals and by scientific researches and also by cooperation with administrative authorities. Dr. Roux, director of the Pasteur Institute, has been elected honorary president of the new association. Dr. Verne has been appointed director.

Death of Prof. Charles Girard

The death of Dr. Charles Girard, professor of the surgical clinic of the Faculté de médecine de Genève, has just been reported. The société suisse des cirurgiens, at its recent annual session, had elected Professor Girard president (to replace Professor Kocher, who has been president since the foundation of the society) when the telegraph brought the news of Professor Girard's death. Professor Roux of Lausanne has been made president of the society.

Death of Prof. Gilbert Ballet

Dr. Gilbert Ballet, professor in the Faculté de médecine de Paris, has just died, aged 63. His death is a great loss for pathology, neurology, and legal medicine. He early decided to devote himself to diseases of the nervous system, beginning by being head of Charcot's clinic at the Salpêtrière. From 1907 to 1909 he filled the chair of history of medicine, and in 1909 obtained a position suited to his abilities, that of professor of the clinic of mental pathology and diseases of the brain at the hospice Sainte-Anne. He was a most eloquent speaker and a remarkable professor. He was also a controversial speaker of the first rank and always took a leading part in the discussions of the Académie de médecine. He was an uncompromising enemy of alcoholism. He drew up the report of the commission appointed by the Académie de médecine to study the modifications to be introduced in the treatment of the insane. He opposed the current opinion which demands that the medicolegal expert pronounce on the degree of responsibility of the accused. The physician, he believes, has nothing to do with responsibility; he should be called on to say only if the subject is abnormal and in what way, whether or not he is dangerous, why, and in what degree. This is the thesis which he succeeded in having adopted by the Congrès des aliénistes et neurologistes français held in Geneva, in 1908. Dr. Ballet was a member and president of many societies, president of the Congrès des aliénistes et neurologistes français and founder of the Société française de psychiatrie. He had been a member of the Académie de médecine since 1912. He published a large number of works among which are his Le langage intérieure et les diverses formes de l'aphaise (thèse d' agrégation, 1886); in collaboration with Proust, a work on the Hygiene of the Neurasthenic; also, Clinical Lessons on Neuroses and Psychoses and a Treatise on Mental Pathology published in 1903. He was director of the *Revue de médecine légale et d'anthropologie criminelle.*

Marriages

ASST. SURG. LISTON PAINE, U. S. P. H. S., Victor, Mont., to Miss Virginia Pratt Spalding of Morganfield, Ky., March 22.

PASSED ASST. SURG. PENLIE BRISCO LEDBETTER, N. S. Navy, to Miss Harriet Elizabeth Hubbard of Newport, Ky., March 15.

WILLIAM MAGILL SCHULTZ, M.D., Philadelphia, to Miss Emma Downs Carter of Plainfield, N. J., March 28.

ASST. SURG. GEORGE WEHNES CALVER, U. S. Navy, to Miss Jessie Willits, at Manila, P. I., March 15.

GEORGE ANDERSON CRAFTON, M.D., to Miss Mary Mozelle Boyd, both of Fulton, Ky., March 17.

ROBERT FAGIN, M.D., Memphis, Tenn., to Miss Hattie McGee of Baldwin, Miss., April 2.

JAMES STEWART BELL, M.D., York, Neb., to Miss Kathlyn J. Kiely of Chicago, March 13.

JAMES SAMUEL GOETZ, M.D., to Mrs. Louise Strouse, both of Omaha, March 27.

Deaths

Henry Berlin, M.D., Chattanooga, Tenn.; University of Rostock, Germany, 1875; University of Tennessee, Nashville, 1885; aged 64; a Fellow of the American Medical Association and once president of the Tennessee State Medical Association; professor of abdominal surgery and clinical gynecology in Chattanooga Medical College from 1887 to 1906 and thereafter emeritus professor; surgeon and chief of staff of the Erlanger Hospital, Chattanooga, and visiting surgeon to St. Vincent's Infirmary; one of the best known and most loved physicians of Chattanooga; died at his home, March 31, from arteriosclerosis.

Samuel Pearce Duffield, M.D., Highland Park, Mich.; University of Giessen, Germany, 1858; Detroit Medical College, 1871; aged 82; a Fellow of the American Medical Association; a member of the American Chemical Society and an honorary member of the Michigan Pharmaceutical Society; a member of the faculty of Detroit Medical College from 1868 to 1872, and health officer of Detroit from 1887 to 1893, and from 1895 to 1898; one of the founders of the Parke-Davis Company which was originally known as Duffield and Parke; died at his home, March 25, from pneumonia.

Thomas Hugh O'Connor, M.D., Roxbury, Boston; College of Physicians and Surgeons, Baltimore, 1893; aged 49; a Fellow of the American Medical Association; for ten years police surgeon at Roxbury Crossing and since 1911 a school physician and medical inspector in the Division of Communicable Diseases of the Department of Health; for several years a member of the staff of the Children's Hospital; fell on the ice near his home, March 19, sustaining a fracture of the skull, and died from cerebral hemorrhage, March 30.

Emory Burr Huyck, M.D., Oak Harbor, Ohio; Baltimore University School of Medicine, 1895; aged 53; a Fellow of the American Medical Association; coroner of Ottawa County, Ohio; for fifteen years local surgeon of the Lake Shore and Michigan Southern Railway and chief surgeon of the Toledo, Port Clinton and Lakeside Company; health officer of Oak Harbor for twenty years; died at his home, March 20, from nephritis.

William Hayden Campbell, M.D., Los Angeles, Calif.; Gross Medical College, Denver, 1890; Miami Medical College, Cincinnati, 1891; aged 67; a Fellow of the American Medical Association; formerly a member of the State Board of Medical Examiners of Montana and a resident of Kalispell; who went to Los Angeles about a year ago in search of health; died at his home in that city, March 16, from pneumonia.

William Edwards Headen, M.D., Morehead City, N. C.; University of Maryland, Baltimore, 1891; aged 48; formerly a member of the Medical Society of the State of North Carolina and a member of the Board of Directors of the Morehead City Hospital and of the Bank of Morehead City; and for eight years a trustee of the Eastern Hospital, Goldsboro; died in the Morganton State Hospital, March 19.

Joseph Dyson Aspinwall, M.D., Warsaw, Ind.; Bellevue Hospital Medical College, 1883; aged 56; formerly a well known nose and throat specialist of New York City; who sustained a skull fracture while riding a bicycle in Central Park, New York, nineteen years ago, and had been mentally affected since that time, died at the home of his mother in Warsaw, March 23, from acute gastritis.

Eugene Charles Curtis Winter, M.D., Washington, D. C.; Howard University, Washington, D. C., 1883; aged 67; a member of the Medical Society of the District of Columbia; also a pharmacist; for many years physician to the poor and resident physician at the Minor Hospital for Children; died at his home in Maywood, Dominion Heights, Va., March 20, from cerebral hemorrhage.

Robert L. Lynch, M.D., Washington, D. C.; George Washington University, Washington, D. C., 1896; aged 50; a Fellow of the American Medical Association; a graduate of the National College of Pharmacy and formerly one of the commissioners of pharmacy for the District of Columbia; since 1905 chemist of the Health Department; died at his home, March 26, from pneumonia.

Ralph James Howe, M.D., New York City; University and Bellevue Hospital Medical College, 1914; aged 24; until recently an intern in the City Hospital, Blackwell's Island, New York City, resigning this position to accept similar work in the Willard, N. Y., State Hospital; died in Willard, March 28, from heart disease.

Walter H. Merriam, M.D., Cleveland; Cleveland University of Medicine and Surgery, 1895; Western Reserve University, Cleveland, 1898; aged 48; a Fellow of the American Medical Association; associate in medicine in his alma mater; physician in charge of the medical dispensary of Charity Hospital; died at his home, March 28, from pneumonia.

A. A. McQueen, M.D., Weatherford, Texas; Medical College of South Carolina, Charleston, 1860; aged 79; surgeon of the Fifth Alabama Regiment, C. S. A., during the Civil War; for many years surgeon of the Texas and Pacific Railroad at Weatherford; died in that place, December 27, from senile debility.

Robert S. Hart, M.D., Pisgah, Ky.; Washington University School of Medicine, Baltimore, 1869; aged 72; a member of the Kentucky State Medical Association; a Confederate veteran; for more than forty years a practitioner of Fayette and Woodford counties; died at his home, March 21, from heart disease.

Emlen Physick, M.D., Cape May, N. J.; University of Pennsylvania, Philadelphia, 1878; aged 58; a member of the Medical Society of New Jersey; for many years president of the Society for the Prevention of Cruelty to Animals; died at his home, March 21, from cerebral hemorrhage.

Ezra Allen Hobbs, M.D., South Framingham, Mass.; Medical School of Maine, Brunswick, 1869; aged 70; an honorary member of the Massachusetts Medical Society and medical examiner for the South District of Middlesex; a veteran of the Civil War; died at his home, March 25.

John F. Carey, M.D., Braceville, Ill.; St. Louis College of Physicians and Surgeons, 1895; aged 54; a Fellow of the American Medical Association; for four terms president of the board of education and physician of Grundy County for twenty years; died at his home, March 19, from myocarditis.

John B. Watson, M.D., Deerfield, Kan.; Barnes Medical College, 1898; aged 39; a Fellow of the American Medical Association; formerly of Ashland, Ky.; was struck by a street car in Chicago, March 26, and died from his injuries half an hour later at St. Luke's Hospital.

James Manning Moore, M.D., Albany, N. Y.; Albany Medical College, 1894; aged 43; a member of the Medical Society of the State of New York; clinical assistant in his alma mater and later lecturer in physical diagnosis; died at his home, March 21, from pneumonia.

Thomas B. Earley, M.D., Philadelphia; Medico-Chirurgical College of Philadelphia, 1890; aged 49; a Fellow of the American Medical Association and a member of the staff of Jefferson Hospital for many years; died at his home, March 21, from bronchial pneumonia.

David E. DeRoss, M.D., Wichita, Kan.; Eclectic Medical Institute, Cincinnati, 1875; aged 72; secretary of the board of health of Wichita, from 1901 to 1904; a veteran of the Civil War and a survivor of the Little Big Horn campaign; died at his home, March 28.

Edward Wesley Roos, M.D., New York City; University of Buffalo, N. Y., 1903; aged 35; formerly a practitioner of Corning, N. Y., and oculist and aurist to the Corning Hospital; died at his home in New York, February 26, from nervous breakdown.

Sidney Lorenzo Williams, M.D., Birmingham, Ala.; Chattanooga, (Tenn.) Medical College, 1894; aged 53; a member of the Medical Association of the State of Alabama; a practitioner and druggist of Birmingham; died in an infirmary in that city, March 20.

Perry Lee Bolsinger, M.D., Johnstown, Pa.; Hahnemann Medical College, Philadelphia, 1900; aged 39; died March 21, in the Hahnemann Hospital, Philadelphia, where he had been operated on about three weeks before for disease of the liver.

John R. Smith, M.D., Golconda, Ill.; Jefferson Medical College, 1864; aged 71; while passing through Pratt, Kan., with his invalid daughter, March 19, on the Rock Island Railroad, was stricken with cerebral hemorrhage and died.

Percy L. McDade, M.D., Silver City, N. M.; Texas Christian University, Fort Worth, Texas, 1911; aged 34; formerly of Fort Worth, Texas; died at St. Joseph's Sanatorium, Silver City, N. M., March 17, from tuberculosis of the lungs.

Elihu L. Cook, M.D., Harlan, Ia.; College of Physicians and Surgeons, Keokuk, Ia., 1876; College of Physicians and Surgeons, Chicago, 1885; aged 76; a veteran of the Civil War; died suddenly at his home, March 28.

James H. Wells, M.D., Wilcox, Pa.; Bellevue Hospital Medical College, 1884; aged 62; for many years postmaster of Wilcox, and township clerk and treasurer; died in the Kane Summit Hospital, Kane, Pa., March 25.

Henry K. Deen, M.D., Central, Ind.; Northwestern University Medical School, Chicago, 1862; aged 75; one of the oldest practitioners of Harrison County; died at his home, about February 23.

John C. Lewis, M.D., Waukon, Iowa; State University of Iowa, Iowa City, 1889; aged 57; coroner of Allamakee County and health officer of Waukon; died at his home, March 22, from pneumonia.

John Lester Johnson, M.D., Milwaukee, Wis.; Milwaukee Medical College, 1902; aged 35; a veteran of the Spanish-American War; died at the home of his parents in Milwaukee, March 21.

William George Siegel, M.D., Brooklyn; Long Island College Hospital, Brooklyn, 1910; aged 28; assistant surgeon to Trinity Hospital, Brooklyn; died at his home, March 25, from pneumonia.

Chauncey S. Lamb, M.D., New Haven, Conn.; University of Buffalo, N. Y., 1893; aged 44; a member of the Connecticut State Medical Society; died at his home from pneumonia, March 22.

Mary E. Blackmar Brueson, M.D., Jacksonville, Fla.; Women's Medical College of Pennsylvania, Philadelphia, 1867; aged 74; died at her home in South Jacksonville, March 19.

Amos Sawyer, M.D., Hillsboro, Ill.; Washington University, St. Louis, 1859; aged 78; once president of the Central Illinois Medical Society; died at his home near Hillsboro, March 18.

Suzette Ehrmann Dunlevy, M.D., Brooklyn; Homeopathic Medical College of Missouri, St. Louis, 1879; aged 80; died at the home of her daughter in New York City, March 25.

Helen T. Myers, M.D., Colorado Springs, Colo.; Hahnemann Medical College, Chicago, 1883; aged 77; died in Falconer, N. Y., February 10, from chronic laryngitis.

Jesse N. Ball, M.D., Bogalusa, La.; Louisville (Ky.) Medical College, 1893; a member of the Louisiana State Medical Association; died suddenly at his home, March 15.

James Hope Stewart, M.D., Roxbury, Boston; College of Physicians and Surgeons, Boston, 1891; aged 74; died at the home of his daughter in Randolph, Mass., March 25.

Kenneth Gunsolus, M.D., Detroit; Queen's University, Kingston, Ont., 1871; aged 65; a member of the Michigan State Medical Society; died at his home, March 24, from arteriosclerosis.

Emil Sincere, M.D., Chicago; University of Louisville, Ky., 1874; aged 80; formerly a member of the Illinois State Medical Society; died at his home in Chicago, March 30.

Lexor B. Snow, M.D., Cleveland; Western Reserve University, Cleveland, 1887; aged 69; a member of the Cleveland Academy of Medicine; died at his home, March 16.

Frederick Eugene Grant, M.D., Kansas City, Mo.; University of Michigan, Ann Arbor, 1877; aged 68; a veteran of the Civil War; died at his home, March 15.

James H. Spears, Dresden, Tenn. (license, Tennessee, 1889); aged 75; died suddenly at his home at Liberty Church, 6 miles south of Dresden, March 23.

John William Doherty, M.D., Jersey City, N. J.; University of Vermont, Burlington, 1887; aged 50; died at his home, March 26, from angina pectoris.

Alvis Marcellus Zahorik, M.D., Chicago; Dearborn Medical College, 1906; aged 56; died at his home in Chicago, March 24, from cerebral hemorrhage.

Leighton I. Sherwood, Wenona, Ill. (license, Illinois); aged 86; a practitioner since 1859; died at his home, February 16, from bronchopneumonia.

Ernest G. H. Miessler, Chicago (license, Illinois, years of practice, 1878); a resident of Chicago since 1871; died at his home, March 2, aged 90.

Maria Louisa Cummings, M.D., Roxbury, Boston; Boston University School of Medicine, 1879; aged 73; died at her home, March 24.

Arthur Guilbeau, M.D., Breaux Bridge, La.; Tulane University, New Orleans, 1879; aged 59; died at his home, March 17.

James I. Marchand, M.D., Irwin, Pa.; Jefferson Medical College, 1862; aged 77; died at his home, March 24.

T. D. Chunn, Holly Grove, Ark. (license, Arkansas, 1903); aged 84; died at his home, March 14.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE WINE OF CARDUI SUIT

(*Continued from page 1154*)

April 3, Morning

The Court met pursuant to adjournment. Dr. Arthur Loevenhart resumed the stand as a witness on behalf of the defendants.

FURTHER CROSS-EXAMINATION BY MR. HOUGH

Mr. Walker, attorney for the plaintiffs, made a motion for the purpose of taking the deposition of Mrs. Lydia Powell of Kentucky, stating:

May it please the court, I wish to make a motion for the purpose of taking the deposition of Mrs. Lydia Powell of Kentucky, the woman in reference to whom we tried to cut out one of the pictures in one of the articles and where the JOURNAL charges that she is dead. We received word Saturday or Friday night by telegram that she was unable to come here, that she was ill in bed, but that her deposition might be taken and we want to take it. Up to that time, she was ready to come here, but she has a severe attack of grip and her doctor says she must not come. We want to take the deposition of that lady, whom they say is dead, either on written interrogatories or send some one down there for the purpose of getting her deposition.

The Court ruled that the deposition could be taken on written interrogatories.

CROSS-EXAMINATION OF DR. LOEVENHART

Mr. Hough: Q.—Doctor, do all works on pharmacology and therapeutics hold that, if a medicine or drug or substance has no effect on the circulation or respiration of a dog that has been anesthetized it will have no effect whatever upon a sick human being?

Objection was made by Mr. Scofield, the Court ruling that the witness might answer, to which the defendants excepted.

A.—I do not know all the textbooks of pharmacology and therapeutics.

Mr. Hough: Q.—Do any that you know of so state or hold?

Mr. T. J. Scofield:—That is objected to, I do not think that is proper.

THE COURT:—I think that is for the purpose of testing the general knowledge of the witness, and he may answer.

To which ruling of the Court the defendants, etc., excepted.

A.—I do not recall having ever seen a statement in any textbook on pharmacology or therapeutics bearing on that point.

Mr. Hough: Q.—Either directly, or indirectly? A.—Not as I recall.

Q.—Do you know of any work on pharmacology and therapeutics which states the contrary?

Mr. T. J. Scofield:—If the Court please, I object to that. The doctor has made no such statement at all.

THE COURT:—He may answer.

To which ruling of the Court the defendants, etc., excepted.

Mr. Hough:—I am entitled to know how much he has read.

THE COURT:—He may answer.

(The question was then read.)

A.—What is the contrary, please?

Mr. Hough: Q.—That the conclusion which you drew from the experimentation on the dog was not conclusive as to the effect of the medicine on a sick human being. A.—May I get your original statement?

(The preceding questions and answers were then read.)

A.—I have never seen a statement with reference to the proposition in any textbook, either pro or con.

Q.—Or which bears on the proposition in any way? A.—My general knowledge of what these books contain would lead me to draw a conclusion regarding it, I mean to say coupled with my general knowledge of the subject, it would lead me to a conclusion.

Q.—What conclusion would they lead you to?

Mr. T. J. Scofield:—That is objected to. It was not gone into on direct examination, and he has made no statement that would justify the question.

THE COURT:—I think that question is well taken. We have not the books that he has read.

Mr. Hough:—We are trying to find out, your Honor, what books he has read. He has declined to name any book pro or con and I think we are entitled to get that out of the witness.

THE COURT:—Here is a man whose life, apparently has been given up to independent research and he has testified very frankly and openly and positively. Now he has told you that, so far as the literature is concerned, that he does not find certain things—

Mr. Hough:—In the literature.

THE COURT:—Yes.

Mr. Hough:—But there must always be a foundation for the belief, teaching and principles on which an expert pharmacologist acts. He must start with some foundation in some medical work, or he must evolve the whole thing from his inner consciousness, starting on the theory that nothing has been written on the subject.

THE COURT:—But the present question is based on the experiments which the witness has made, and now you are asking him whether certain things appear in certain books, or any books.

Mr. Hough:—What I want to get at is the name of any medical work which justifies the conclusion which he drew from the experiments on the dog.

THE COURT:—Ask him if he knows of any.

Mr. Hough: Q.—Do you know of any? A.—Any what?

Q.—Any work which justifies, in its statement of principles, the conclusion which you drew as to your experiment on the anesthetized dog?

Mr. T. J. Scofield.—That is objected to for the same reasons.

THE COURT:—He may answer.

To which ruling of the Court the defendants, etc., excepted.

A.—That involves of course the question of the conclusions I drew.

Mr. Hough:—Oh, no.

THE COURT:—Oh yes, necessarily.

Mr. Hough:—It applies first to the question I asked.

THE COURT:—Read the question.

(The series of questions relating to this subject was then read.)

Mr. Hough:—It depends on whether the witness means the conclusions he drew from the experimentation, or the conclusions he drew from what he read in some other book. I am not referring to the conclusions which you drew from your experimentation.

Mr. T. J. Scofield:—If the Court please. I object to it because this is the only conclusion that the doctor drew and this is not cross-examination.

THE COURT:—I think he may answer if he can.

To which ruling of the Court the defendants, etc., excepted.

A.—I drew certain conclusions from my experiments. I drew no conclusion in reference to what my experiments showed from any other source than my experiments, except my whole past experience as an experimentor and my acquaintance with the literature on the subject.

The witness was then asked concerning his acquaintance with literature on this subject. He stated that as a student he used, among other sources, Cushny's textbook on pharmacology stating:

He gives references at the end of each chapter so that one who does not know the literature may find the names of the journals and of the principal articles there. He puts as the conclusion of the chapters in his book the things which enable you to get at the sources of the information from which he compiles his book.

Q.—Did not Cushny state that negative tests do not disprove the value of medicine?

Mr. T. J. Scofield:—That is objected to, if the Court please.

A.—I think Cushny did state that.

THE COURT:—That has appeared here before. His answer may stand.

To which ruling of the Court the defendants, etc., excepted.

Mr. Hough: Q.—Did you ever read Sollman? A.—I never read Sollman from beginning to end.

Q.—Would you regard Sollman as an authority? A.—Sollman's book was published, if I recall, something like ten years ago. No book published ten years ago is an authority in pharmacology today.

Q.—You mean the science changes so rapidly? A.—The science changes rapidly.

Q.—So what pharmacologists and therapeutists believed ten years ago, they do not believe today? A.—A great many things that appeared ten years ago and were stated as "It is that such and such a thing is useful," may in the meantime have been shown to be worthless, but what was definitely known to be fact, ten years ago, is a fact today. What was stated as a fact ten years ago is, in the main, a fact today. The theories may change, but the facts remain.

Q.—So that conclusions based on negative results today may be changed in the next ten years? A.—It is difficult to say what the future will bring forth in any branch of human knowledge. I am certainly not in a position in which I will venture to say what the future will bring forth in any branch of human knowledge.

The witness was then asked further questions concerning his knowledge of Sollman's book. He was then asked:

Mr. Hough:—I asked him if Sollman was regarded as any authority among pharmacologists.

THE COURT:—He may answer that question.

The Witness: *A.*—Sollman is personally regarded as a very competent pharmacologist. That of course does not apply to his book. I have not seen this edition of his book at all, if it exists. I have not seen the date of the copyright there at all.

He was then asked whether he agreed with the statements in Sollman's book to which he replied that he had not read the facts submitted to him in a previous edition of Sollman. He was then asked:

Q.—Have you read Cushny you say, and you state that Cushny—*A.*—I have read parts of Cushny.

Q.—You know that Cushny states the rule the opposite of what you stated it, as to a conclusion from negative tests, don't you? *A.*—I will answer that question and explain. In the former edition of the book—well, in an earlier edition of any book, a man often makes statements which, in a later edition of his book, he omits. Now, this book that Mr. Hough has is an earlier edition of Cushny's book. The last edition of his book, which was gotten out about six months ago; in that edition he entirely omits this whole part. He has changed his opinion himself, I think and I think I know why he has changed it, since this book was written. Since he is not here to be questioned about it, of course, it is impossible to state just why, but this statement is not in Cushny's last edition, which was published about six months ago. It is omitted entirely.

Q.—What statement is omitted entirely? *A.*—The statement that you quoted there yesterday—or Friday.

THE COURT: *Q.*—You mean about the negative tests? *A.*—Yes, sir.

Mr. Hough: *Q.*—What does he state in his new edition with reference to negative tests? *A.*—He says nothing. He omits it so far as I could see.

Q.—He does not state that you can draw a conclusion from negative tests that a medicine is not valuable to a sick human being, does he? *A.*—He does not draw any conclusion one way or another. He omits the whole proposition as apparently unimportant or untrue according to his original book.

Q.—This edition appears to be 1910. Is that the old edition? *A.*—That is an older edition. There have been many editions of this book. The last edition was in 1915, and I think appeared about October of last year and apparently represents the writer's opinions on the part of the author.

Q.—Well now, then, can you name any authority which agrees with you on that proposition, or any medical book or any book on pharmacology?

Mr. T. J. Scofield:—I object to that question.

Mr. Hough:—I will ask to that—any book which is taught in the schools of America or used in any school in America. *A.*—I do not know what books are used in the schools of America.

Q.—Do you know of any in America, any American publication which agrees with you on that proposition? *A.*—I have never looked it up to see whether they agree with me or not. Therefore, I am unable to state.

Q.—But you say that as they are published, they are submitted to you by the publisher? *A.*—They are often, some of them are submitted to me.

Q.—Then you must know. *A.*—No, I have never looked them up on this point. I have not been interested.

Q.—What kind of a dog was that dog that you operated on? *A.*—It was a cur, I think.

Q.—A male or a female? *A.*—It was a male as I recall; I think I am correct about that.

Q.—What became of the dog? *A.*—The dog was—at the conclusion of the experiment, killed with an anesthetic without being allowed to recover consciousness and was then incinerated, or at least that was the direction I gave to my janitor as with all animals of that kind, and I presume he did that with it.

Q.—How much ether would it have taken to have killed the dog in the first place, at the time you were giving it the anesthetic? *A.*—You mean what is the fatal dose of ether for a dog?

Q.—Well, that is one way of putting it. *A.*—Pardon me?

Q.—I say, that is one way of putting it. *A.*—A vapor containing approximately six per cent. of ether will result fatally to an animal.

Q.—How much ether did you give this dog? *A.*—I did not measure or weigh the ether, or determine its concentration in the vapor that the animal was breathing. I merely know that the animal was in a stage of surgical anesthesia.

Q.—You do not know how much more added to what you gave would have killed the dog. *A.*—No, I do not, exactly. I know that the dog was not anywhere near dead, but was in excellent condition as shown by his high blood pressure and his perfectly normal respiratory movements, just as a person is when being operated upon.

Q.—Approximately how much more? *A.*—In grams?

Q.—No per cent.; twice the amount? *A.*—Twice the concentration of vapor required as an anesthetic, will kill a person or an animal.

Q.—It will? *A.*—Yes.

Q.—Would fifty per cent. more kill the dog? *A.*—That would be in the limit of what would kill; an increase of 50 per cent. over the amount required to anesthetize with ether, is in the range of the amount which will be fatal, if continued.

Q.—Now, if you had given the dog 50 per cent. more ether than you gave him— *A.*—50 per cent. more concentrated vapor than I gave him.

Q.—Well, put it that way, whatever it was. Would there have been any change between the time you gave it to him and his death, in the blood pressure or the respiration? *A.*—Oh, yes.

Q.—There would have been a difference? *A.*—Yes.

Q.—What would have been the difference, so far as the blood pressure is concerned? *A.*—The blood pressure would have gradually become lower.

Q.—What would have been the difference so far as the respiration is concerned? *A.*—The respiration would have become smaller in size and of slower rate.

Q.—Until they finally stopped? *A.*—Until they finally stopped.

Q.—How much alcohol would it take to kill a dog? *A.*—I do not recall the fatal dose of alcohol, for a dog.

Q.—I thought you told me it was well known? *A.*—I did not.

Q.—Didn't you state that— *A.*—I have never stated that in this court room or anywhere else.

Q.—Then I have confused your statement with that of some other witness. *A.*—That is all right.

Q.—You do not know? *A.*—I do not know. I do not know offhand. It is a matter that could be looked up.

Q.—Do you know approximately? *A.*—I could state what would certainly kill him, but I could not tell you what would be the smallest amount which would kill a dog.

Q.—What would certainly kill him? *A.*—Of course it will depend on the size of the dog.

Q.—I mean, a 14-pound dog. *A.*—Administered how?

Q.—Subcutaneously. *A.*—In what concentration?

Q.—You name the concentration. *A.*—You are asking me to give you a definite dose and you won't state the conditions. It will vary according to the concentration, very large.

Q.—Take pure alcohol. *A.*—Pure absolute alcohol—I will have to figure that out. Oh, it would be somewhere in the neighborhood I presume of one ounce of absolute alcohol. It would be somewhere in that neighborhood.

Q.—Would it require any different amount if it was given to him in his stomach? *A.*—Probably, it probably would.

Q.—More or less? *A.*—I should think it would require less—more to kill by stomach perhaps.

Q.—Why is that? *A.*—Although it would depend again somewhat on the concentration. If you are speaking of absolute alcohol, it might even require less. It is very difficult to state because the local action of alcohol would vary and become of great prominence.

Q.—Now, speaking of absolute alcohol, there is no such thing, is there, except in theory? *A.*—Alcohol can be prepared so nearly absolute that it is very difficult for anyone to detect any water in it.

THE COURT:—95 per cent. is called absolute, is it not?

A.—No, sir. The alcohol of commerce that is called "absolute" is something like 99.9 per cent., 99.8, 99.9 per cent.

Mr. Hough: *Q.*—How much alcohol that was of the strength of 20 per cent. would it require to kill a dog, given in his stomach? *A.*—I do not know. I have stated before that I did not know, that I was simply approximating from my general knowledge of what might be. I am simply taking my knowledge of the fatal dose of ethyl alcohol. I have not looked up the statements made in the literature.

Q.—What were you figuring? *A.*—I was figuring on the basis of the fatal dose for man.

Q.—You figure that way, don't you, as between the weight of a man and the weight of a dog? *A.*—We do.

Q.—And as you can figure— *A.*—But I may say that we figure that way simply in the absence of other data.

Q.—How much of 20 per cent. alcohol would be a fatal dose for a dog injected under the skin, subcutaneously? *A.*—I do not know.

Q.—You are unable to approximate? *A.*—I might be able to approximate, that is, I could not by any means give you the smallest amount but that is all in the literature if we care to look it up. I could not simply sit here and do a piece of research work on that proposition.

Q.—Would an ounce be sufficient? *A.*—An ounce of 20 per cent. alcohol?

Q.—Yes. *A.*—I should say not.

Q.—But anything short of the lethal dose would tend to increase to some extent both the blood pressure and the respiration, would it not? *A.*—No, sir.

Q.—Well, if the lethal dose increases the blood pressure and respiration, why don't something just a little short of the lethal dose also increase it, but not so much. *A.*—Because the lethal dose—that is to say, because the dog's blood pressure at death is zero and his respiration is zero, which is evidently not increased over the normal.

Q.—But is there not a time in giving a dog alcohol less than the amount which is required to kill, when the effect commences to be apparent on the circulation and respiration? *A.*—Certainly.

Q.—In other words, it is not necessary to wait until you give the lethal dose before the effect is known? *A.*—Oh, no.

Q.—Therefore, if you give a little less than the lethal dose, there is a change in the respiration and circulation? *A.*—Certainly.

Q.—And as you give a little less than that, there is a change, but not so great? *A.*—That is right.

Q.—And you give a little less than that and there is still a change, but not so great as before. *A.*—It depends on how much less you give.

Q.—At what point do you stop, would you say? *A.*—I am unable to say.

Q.—Then how could you say that 20 per cent. alcohol added to the anesthetic would not affect the blood pressure or respiration at all? *A.*—I said it did not. I did not say it would not. I said it did not affect the blood pressure or respiration of the animal under observation.

Q.—Would you not conclude from that, that there might be something wrong with your experiments? *A.*—Absolutely not. Having done that many times before, and found the same result, I concluded that I was getting the normal result.

Q.—A certain amount of alcohol is freely oxidized in the stomach of a man or dog? *A.*—Absolutely not.

Q.—There is no amount that is freely oxidized? *A.*—Not as far as I know. Oxidization usually does not occur in the stomach. There is no oxygen there, or but very little.

Q.—I have reference to alcohol when it is taken into the stomach; it is oxidized in the system, is it not? *A.*—It is oxidized in the system. It is not oxidized in the stomach. The stomach is outside of the body in a certain sense. It is only after it is absorbed in the system that it is oxidized.

Q.—Well, it is freely oxidized? *A.*—It is in a certain amount.

Q.—That is what I say. *A.*—Yes.

Q.—It is freely oxidized in the proportion of 20 per cent., isn't it? *A.*—Yes, if it does not go in too large an amount.

Q.—So any amount that is freely oxidized of course would not increase the blood pressure or affect the respiration, would it? *A.*—It might.

Q.—But does it as a rule? *A.*—I have never made any experiments to determine that.

Q.—Then you mean that it may or may not? *A.*—It depends on how quickly it was oxidized; how rapidly it was absorbed; as to whether it ever got into the blood in sufficient concentration to affect the blood pressure or respiration. It all depends on the rate of absorption or rate of oxidization; the rate at which it goes into the body and the rate at which it is removed from the body by oxidization.

Q.—Now, you first gave it to nine rabbits of the 13? *A.*—Yes.

Q.—Was that by the mouth? *A.*—By mouth.

Q.—Or injection. They did not die, you say? *A.*—The first nine did not. They recovered.

Q.—Are they alive now? *A.*—I could hardly state.

Q.—You do not know how long they lived afterwards? *A.*—They recovered in perfect condition. They were eating and were normal to all appearances.

Q.—Now, as to the other four, you gave how much more of Wine of Cardui? *A.*—I increased the dose of Wine of Cardui from approximately half the amount required to kill, up to the amount required to kill, by steps.

Q.—How many steps did you have to take? *A.*—I think, as near as I can remember, three, two or three steps.

Q.—How much did they increase at each day? *A.*—About one eighth or a little more than one eighth, perhaps one sixth of increase each time.

Q.—How far apart, or how rapidly did you administer it? *A.*—I administered it all in one dose by mouth.

Q.—Well, in five minutes or ten minutes? *A.*—Well, I did not time myself; it was given within a period of perhaps 15 or 20 minutes. I do not know exactly how long I took because I did not measure it and I don't like to estimate a thing like that, that happened nearly a year ago.

Q.—What was the potent amount, figured in alcohol, that they took? *A.*—The fatal dose that I found ranged between eight and eight and a quarter grams of absolute alcohol, calculated as absolute alcohol, per kilogram of body weight of the rabbit.

Q.—What was the body weight of the rabbit? *A.*—Oh, it varied. It varied from fifteen hundred and two thousand grams.

Q.—Can you tell me the exact amount? *A.*—Maybe to 2,500 grams.

Q.—Can you tell me the exact amount of 20 per cent. alcohol which you gave which killed one of the rabbits? *A.*—It ran up, as I recall, to an ounce and a half of the 20 per cent. alcohol, something in that neighborhood.

Q.—Then you cut them open and examined the stomach? *A.*—Yes, sir, after these that died. I did not kill any in which the Wine of Cardui was not fatal. I did not kill those that survived the dose and examine them. I merely opened and autopsied those that died from the Wine of Cardui, and the 20 per cent. alcohol.

Q.—You did not see any effect from anything, except the alcohol. *A.*—No, sir.

Q.—You are positive of that? *A.*—Absolutely.

Q.—Do you know how long it takes for viburnum prunifolium to affect a sick person? *A.*—I do not, or whether it can affect them at all.

Q.—Well, it is a medicine that is referred to by all writers on therapeutics, isn't it? *A.*—No, sir.

Q.—Isn't it? *A.*—I think not.

Q.—By a great many of them? *A.*—Some of them refer to it, and some do not. I could not say how many, but I feel perfectly confident that all writers on therapeutics do not refer to it.

Q.—It is in the United States Pharmacopeia, isn't it? *A.*—I believe so, yes. Yes, it is in the pharmacopeia.

Q.—That is, of the School that you belong to? *A.*—What do you mean by the school? The School of the Pharmacopeia?

Q.—Do you know anything about the different schools of medicine? *A.*—I have heard. I have heard of different schools of medicine.

Q.—What are the other schools of medicine, other than the one you belong to? *A.*—My own interest in medicine—I graduated, the only school I graduated from in medicine is the Johns Hopkins University—and my interest in medicine has been in the action of drugs.

Q.—What is your school of medicine? *A.*—My school of medicine is the school of medicine that gives the drug and observes, if possible, whether it has any effect or not.

Q.—Are you a homeopath? *A.*—I am not.

Q.—Well, what effect do you expect the medicine to give or to have on a well woman, whose menstruation was perfect? *A.*—What medicine?

Q.—Didn't you say you gave some Wine of Cardui to a well woman? *A.*—Oh, I never gave Wine of Cardui. I gave the residue from the evaporation of Wine of Cardui.

Q.—Isn't that the dose that the homeopathic—isn't that the test that the homeopathist usually make? *A.*—I think they do not make such tests, but I am not sure.

Q.—Well, do you recognize the principle as being a correct principle for making tests? *A.*—To give drugs to a well person?

Q.—To give drugs to a well person and see what the effect is, and then, in different doses to cure? *Simila similibus curantur.* That is the principle upon which they go, is it not? *A.*—I have heard of that principle.

Q.—And you were applying that principle in that test, were you not? *A.*—Oh, no, I was not. The only principle I applied, or ever do apply, in the study of any drug in its action on any living creature, is to give the drug to that creature and observe as clearly and carefully as I can, whether it has any effect. Now, it is very important to me in studying the action or use of any drugs in the treatment of any diseased condition, to also know its effect on a healthy human being or a sick human being, the healthy and the sick animal, as near as possible under the same conditions as we expect to use it in the cure.

Q.—Is it not a well recognized fact that there is a difference in the action of drugs in a well person and a sick person? *A.*—As a general proposition, I do not think your statement will hold water.

Q.—Well, in what respect is the statement erroneous? *A.*—It is erroneous in this respect: I can name you many. Chloroform and ether will anesthetize a sick person or a well person. Alcohol will make a sick person or a well person drunk. Digitalis will kill a sick person or a well person, and will often slow the pulse. Purgatives purge sick people and well people. Soporifics, such as chloral, put sick people to sleep and put well people to sleep, and I might go on and state thousands of incidents.

Q.—Outside of anesthetics— *A.*—Take atropin—

Q.—What drug do you know of which would have a different effect on a sick person from what they would have on a well person. *A.*—I could not state anything very positively along that line, Mr. Hough.

Q.—Isn't that what therapeutics teach that there is a difference in the action of drugs on sick people from the action of the same drugs on well people? *A.*—No, sir, I think they do not teach that.

Q.—You know of no one who teaches that? *A.*—I recall no one who teaches that general proposition that the same drug has a different action on a well person, from what it does on a sick person.

Q.—Well, do you know of any who teach that the action is the same with all drugs on well people as on sick people? *A.*—I know no one who teaches that.

Q.—You know of no one who teaches either way? *A.*—Either of those two propositions as you have stated them.

The examination then discussed the witnesses' analysis of Wine of Cardui concerning the substance found and his method of identification. He was asked:

Q.—Would you say that the resins or resinous ingredients of viburnum prunifolium had any therapeutic value? *A.*—Having never used it, I should not make such a statement, cannot from my own knowledge, but I state that I know that viburnum prunifolium is mentioned in many places in the literature as being supposed to be useful as a uterine sedative, with the addition that frequently many physicians do not agree that it is useful, and that the opinion of many physicians is that it has not the virtues which have been claimed for it. I also know that many nostrums are stated to contain viburnum prunifolium and that they use it as a talking point, that it is a very valuable uterine sedative.

Q.—Do you know the same of carduus benedictus? *A.*—I recall no authority, no one—no piece of work in the literature, no competent physician, clinician or scientist who has ever shown that carduus benedictus is of any use whatever in the treatment of disease, except in so far as that is implied by the fact that it is a simple bitter.

Q.—Do you know to what extent it is used by the medical profession? *A.*—I do not.

Q.—Do you know whether it is used at all by them? *A.*—I do not. I have never seen a prescription with it in.

PHARMACEUTICAL PREPARATIONS

Q.—Do you know if it is manufactured by the pharmaceutical houses? You know that, don't you? *A.*—I understand that it is manufactured by certain pharmaceutical houses, but not by every pharmaceutical house. Many such firms as Mulfords and Squibbs at the present time, houses which are very closely in touch with the medical profession—I know that they do not list it in any form. That is my understanding of it. Certain other houses, I understand, do list it.

Q.—Now, coming back—before I say that, is that listed by any of them as a uterine sedative? *A.*—I do not know what—I do not see what right a pharmaceutical house has to state what the therapeutic indications for a drug are, since they have no expert knowledge on that line, and I do not know what they list it under or whether they presume to tell the medical profession or the class of the medical profession who would pay any attention to what they said, what it is used for or not. I have no knowledge along that line.

Q.—Would it not be likely that they would get it from what the doctors say they use it for? *A.*—It is possible.

Q.—Now, coming back to the medical schools, you say you are not a homeopath? *A.*—No, sir.

Q.—Do you ever apply the drugs or do you ever practice any of the principles of homeopathy? *A.*—I could not say as to that, not being familiar with the principles and practices of homeopathy.

Q.—Have you ever seen a homeopathic pharmacopeia with reference to viburnum prunifolium? *A.*—Possibly in browsing through libraries I may have seen it and I may have even taken it off the shelf and

opened it, but I have no distinct recollection of having done so. It is possible.

Q.—Have you ever seen it with reference to carduus benedictus? *A.*—I have not.

Q.—And so far as you know, you never practice or apply the principles of homeopathy? *A.*—I say, so far as I know. I may apply them or may not apply them because I do not know them.

Q.—How about eclecticism? Is that another school of medicine? *A.*—It is said to be.

Q.—Did you ever hear of it? *A.*—I have seen it—I have seen the journal of eclectic medicine, so called.

Q.—Is that your school of medicine? *A.*—I am not a member of that school so far as that is concerned, if it is a school.

Q.—Have you ever seen their pharmacopeia? *A.*—No, I have never seen their pharmacopeia as I recall it.

Q.—On either of those drugs? *A.*—No, sir.

Q.—What would you call your own school of medicine? *A.*—I would call my school of medicine that branch of medicine which investigates diseases and tries to determine their symptoms and their causes and the proper treatment of them. That is to say, so far as drugs are concerned, or the action of drugs on human beings and see what the effects are as nearly as we can determine them. If a drug is capable of acting in enormously small quantities, we find it and we observe it, and if it is capable of acting in small quantities, we see it. Of course it does not make any difference to the drug. The drug does not know whether I am an eclectic or not, or a homeopath. I simply give the drug to an animal or a human being and I give it in a quantity which gives some effect.

Q.—That is the same way with the advocates of the other schools of medicine, isn't it? *A.*—I am not acquainted with their methods. All I know is that we try to control our work as carefully as it is possible to do it. As I understand the homeopathic school of medicine, they lay a great deal of stress on symptoms. They ask a person "Have you a pain in your head or anywhere else?" and they put that down as one of the symptoms of the drug. We don't pay any great attention to the symptoms. We pay more attention to signs, things which can be determined objectively. For instance, if we give a drug for its action on the heart, we take the heart rate, we take the pulse rate and we regard it critically and objectively, and then we do not ask the patient anything. We simply record the circulation under the new conditions and the effect of the administration of the drug.

The examination again took up the constituents of the products analyzed by Dr. Loevenhart, going over the quantities of various drugs and their constituents. The question of the alcohol content was then taken up:

Q.—Is alcohol a preservative? *A.*—Yes, sir.

Q.—If Wine of Cardui were put up with 15 per cent. alcohol, and after a short time, should ferment or spoil, what would you say that action was due to? *A.*—It would depend on the conditions under which it had been preserved and whether any other substances were present. For instance, if the material contained quite a little glycerin or sugar, it would not spoil under any conditions even though there were no alcohol present.

Q.—I am not asking you about other preservatives. I am asking you about this particular thing? *A.*—I do not know what might cause it. It might be left near a radiator; it might evaporate partly or the bottle might break, I would not know why it has not kept.

Q.—An amount of alcohol which would prevent that, would serve a useful purpose? *A.*—Prevent what?

Q.—Prevent the fermentation? *A.*—Certainly, if it prevented the fermentation, the chemical change, it would be serving a useful purpose I should say, but that could also be accomplished by other products.

Q.—What is that? *A.*—I say I agree with you.

Q.—Then the use of alcohol in that connection could not be charged to be vicious, could it? *A.*—The use of alcohol in that connection could be accused as vicious, absolutely.

Q.—Even if used for preservative purposes. *A.*—Yes, sir.

Q.—Now, it would not be vicious, however, if there was more alcohol, sufficient quantities to act as a solvent of the resinous matter, then it would not be vicious, would it? *A.*—If you wanted a preparation containing resinous matter, you would have to use an amount of alcohol which would dissolve the resinous matter.

Q.—If you used more alcohol, in sufficient amount to dissolve the resinous matter in viburnum prunifolium, then the manufacture and sale of it would not be vicious? *A.*—It might be vicious.

Q.—But not for the reasons for which you stated this was vicious? *A.*—I have not stated the reasons for which this is vicious. I have never stated why I regard this as vicious.

Q.—I understood you to state that the reasons why you said this was vicious— *A.*—Wine of Cardui you mean?

Q.—Yes—was that it did not have enough alcohol to absorb the resinous matters? *A.*—That is not a full statement at all of why I regard the preparation as vicious.

Q.—Well, you may state it over again. *A.*—I regard Wine of Cardui as vicious for these reasons: in the first place the amount of alcohol which has been used in the preparation of Wine of Cardui is far in excess of the amount which is required to preserve the material; not in percentage, you understand, but in reference to the material dissolved. It would be perfectly possible, and is possible to prepare an alcoholic concentration of these plants which would contain a much higher per cent. of alcohol, but it would also contain a much higher percentage of these drugs, which if they did not have any active principle in them —which I do not agree with, because I do not know, I have not examined them except this 20 per cent. alcohol, which does not extract anything from them that is useful—the dose would be so reduced that the patient would be getting very little alcohol, as a matter of fact, very, very little alcohol. For instance, if they used the official fluid extract of viburnum prunifolium which contains 55 per cent. alcohol, the dose that the patient would get in taking one dose of that would be 1.1 c.c. of absolute alcohol, practically one quarter teaspoon, whereas in the case of Wine of Cardui, with its tablespoonful dose, it is something like I think 27 times that amount of alcohol.

Q.—Don't that depend on the number of doses of viburnum prunifolium that you take in a day? *A.*—The second reason why I regard—

Q.—One moment, please. Answer this question. *A.*—You have asked me why I regard Wine of Cardui as fraudulent and I would like to finish that.

Q.—Answer this question and then go ahead with it.

THE COURT:—I think your question answers itself, Mr. Hough.

To which ruling of the court the plaintiffs, etc., excepted.

A.—(contined) In the second place I regard it as fraudulent—

Mr. Walker:—There was no question about its being fraudulent. The question was why you thought it was vicious.

The Witness:—He was asking why it was fraudulent.

Mr. Walker:—No, he asked you why you thought it was vicious.

The Witness:—It is vicious because—it is vicious to my mind, in the second place, because it advises the taking of Wine of Cardui over long periods of time by patients for conditions in which it cannot do them any good, as shown by my work among other things. In the third place, it recommends the Wine of Cardui in conditions the early symptoms of which are extremely dangerous. Now, for instance, in cancer, the early symptoms are pain and hemorrhage. Now a woman is told, if she has pain and hemorrhage at the menstrual period, to take Wine of Cardui. She will not have an examination and she will not get an early diagnosis of her cancer and it will not be found out that she has cancer before it is too late to operate. Furthermore, it recommends itself to people for a displaced uterus, that it can take the uterus or womb that is out of position and put it back into position, a thing which it obviously cannot do. For those reasons, the fraudulent claims and the unnecessary use of large amounts of alcohol and the taking of it month in and month out, which they recommend—I might say year in and year out, almost as is possible if it is followed out according to their directions, and the amount, and its being taken day in and day out from the time of puberty, fourteen years, to the change of life, 45 years—that is the reason why I regard it so.

Q.—Now you mean, doctor, that if it was viburnum prunifolium, and it contained 55 per cent. alcohol, it would not be vicious; is that what you mean? *A.*—Not exactly.

Q.—Well, would it be vicious or would it not? *A.*—It would be vicious if it were sold to do things that it could not do.

Q.—Well, is it your opinion then that viburnum prunifolium won't do anything that the doctors give it for? *A.*—That is a matter of opinion, yes sir.

Q.—Therefore you think that the doctors who give viburnum prunifolium to cure these various menstrual troubles, are engaged in vicious work? *A.*—No, I did not say that.

Q.—Don't that follow? *A.*—No, not at all.

Q.—You say that the viciousness is something that you conclude, or that follows as a conclusion from your pharmacologic tests? *A.*—Partly.

Q.—It is a pharmacologic question, not a moral question then, is it? *A.*—Partly. They are so bound up together—

Q.—Would you consider it a therapeutic question? *A.*—A therapeutic question.

Q.—And a physiological question? *A.*—A physiologic question.

Q.—Who suggested that you use the word "vicious" in this connection? *A.*—No one suggested that I use any word in any connection.

Q.—You never discussed it with anybody? *A.*—I don't know that I have. I have absolutely never discussed that with anybody.

Q.—It is a word that you find frequently in works on pharmacology? *A.*—I could not state how frequently pharmacologists use it.

Q.—Have you ever found it in anything? *A.*—I could hardly say whether I have or not. I presume I have.

Q.—Do you know whether you have? *A.*—I do not. I presume that I have. Pharmacologists say what they think and if it involves the use of the word "vicious" they use it.

Q.—Doctor, is not quinin frequently prescribed for amenorrhea, or the absence of menstruation. *A.*—I could not say.

Q.—Is it ever prescribed for amenorrhea? *A.*—I have never seen it prescribed for that, but I presume it is.

Q.—Do you regard Dr. Kelly of Johns Hopkins as any authority? *A.*—Absolutely not.

Q.—He is not an authority? *A.*—No authority except unto himself, as far as I am concerned. I suppose he is to himself.

Q.—Would you regard the teachings of his book in any medical school as vicious? *A.*—I should not.

Q.—If he teaches or recommends anything different from your views on the subject? *A.*—I certainly should not.

Q.—Is his work a standard work? *A.*—It is not. That is to say, in so far as it implies any standards for other people, anything that anyone has to live up to, it is not. If you mean that it is a well known book, I think it is a well known book, but not a standard book.

Q.—Is there any medical work that is any more a standard book than his? *A.*—I could not say. I cannot compare the medical books, not having seen them.

Q.—Do you know of any? *A.*—I am not in the habit of comparing the relative value of all the different books or different authorities of medicine and I am incompetent to do it, anyhow.

Q.—Do you know of any book the opinion of whose author is entitled to more respect than Kelly's? *A.*—I am not in a position to pass on

the credibility of the various authors of text books. It is out of my line.

Q.—Did you study under Dr. Kelly at Johns Hopkins? *A.*—He was the Head of the Department. I may have given an anesthetic for him once or twice, but he never lectured to us. I may have seen him operate as thousands of others have.

Q.—You never read his book? *A.*—I have never read his book, no.

Q.—Either at college or at any other time? *A.*—Absolutely at no time.

Q.—Do you know that he recommends quinin for absence of menstruation, and also for flooding? *A.*—I do not.

Q.—Do you mean that he recommends—

RULING ON INTRODUCTION OF BOOKS

THE COURT:—Mr. Hough, I have ruled that, if a witness recognizes a work as standard, you may use that to refute any views that he has offered on the witness stand. But I think you cannot examine this witness generally or specifically as to an author that apparently he has no confidence in.

To which ruling of the court the plaintiffs, etc., excepted.

Mr. Hough: Q.—You mean you have no confidence in Dr. Kelly's statements? *A.*—I have no knowledge of his statements; how can I have confidence in them?

Q.—Is not his reputation such as to inspire confidence? *A.*—I have not gone into the question of his reputation; I have not discussed Dr. Kelly with people.

Q.—And you do not know his reputation? *A.*—I know his reputation as an operator in gynecology. Any other reputation I know nothing about, because I have not gone into it.

Q.—What is his standing as a gynecologist? *A.*—As an operator in gynecology he is considered an excellent technician. He knows how to operate, he operates well and he operates a great deal.

Q.—What is his standing as a gynecologist? *A.*—As an operator in gynecology he is standing very well, I suppose. I am not in that line of work myself.

Q.—I ask you again, what is his standing as a gynecologist? *A.*—I know nothing about it, apart from power as an operator, and his power in his capacity to prescribe medicines—I know absolutely nothing about his ability, and I have never heard it discussed as to whether he knows what a drug's action is, or what it is not. He is an operator, a surgeon; a surgeon gynecologist.

Q.—And it is usual, I suppose, for a man to operate without knowing anything about gynecology? *A.*—He may or may not know anything. He may know more or less about the use of medicinal drugs in the medical treatment of women's diseases. I do not know what the rule is as to him.

Q.—Would such a man operate more on dogs or on human beings? *A.*—They usually operate more on human beings.

Q.—They ought to know a great deal to operate on human beings, ought they not? *A.*—A great deal about human beings and the results of their operations and the indications for their operations, that is the type of stuff they must know.

Q.—Do you know anything about quinin? *A.*—Yes, sir.

Q.—May amenorrhea be due to malaria? *A.*—It may, I assume.

Q.—Would quinin be a good medicine, if it were due to amenorrhea? *A.*—If amenorrhea were due to malaria, quinin would be an excellent medicine.

Q.—Now, menorrhagia may also be due to malaria, may it not? *A.*—I have never heard of it.

Q.—Have you ever heard of any other menstrual disturbances which might be due to malaria? *A.*—The only menstrual disturbance that I know of that I would presume might be due to malaria would be that whereby anemia, which always follows in malaria, causes a destruction of the blood. With blood destruction and anemia, there is always likely to be no menstruation, whether that anemia is due to hemorrhage or to destruction of the blood by the malarial organism or by any other condition always an anemia will result, or is very apt to result in suppression of the menses.

Q.—Is it not a fact that the same condition may sometimes produce flooding or hemorrhage? *A.*—I have never heard of it, it may be.

Q.—Malaria affects pregnancy, unfavorably, does it not? *A.*—All diseases are apt to affect pregnancy unfavorably.

Q.—And quinin is a good medicine to give for that disease, isn't it, malaria? *A.*—Quinin is, the only reliable, perfectly reliable, drug to be used in malaria.

Q.—So that if quinin—or rather, if malaria would affect menstruation, whether it meant scantiness or profuseness, and would affect pregnancy, and quinin is good for malaria, quinin would be good for those conditions? *A.*—If they were due to malaria?

Q.—Yes, if they were due to malaria? *A.*—If those conditions were due to malaria.

Q.—Now then, menstruation is affected by other causes, isn't it, than malaria. *A.*—Yes.

Q.—And is it not a fact that the same cause may produce in a person both amenorrhea and dysmenorrhea? *A.*—Not to my knowledge.

Q.—Will it not also produce menorrhagia and metrorrhagia? *A.*—Not to my knowledge.

Q.—You know of no single cause which would produce that? *A.*—Produce what? Repeat, please.

Q.—Amenorrhea, menorrhagia, dysmenorrhea and metrorrhagia? *A.*—No, I know of no single condition that would produce those conditions.

Q.—What would produce flooding or menorrhagia?

Mr. T. J. Scofield:—That is objected to. That is not cross-examination. It has been running on for some time—but—

THE COURT:—Oh, the witness qualified generally as an expert here.

Mr. Hough:—He distinctly said—

THE COURT:—He may answer the question.

To which ruling of the court the defendants, etc., excepted.

The Witness:—Any statement that I make with regard to menstruation is of course not authoritative, as I am not a gynecologist and have never specialized or done special work along that line.

Mr. Hough: Q.—But you are a therapeutist, aren't you? *A.*—I am a therapeutist in so far as therapeutics rest on the scientific principles of drug action. I am not a therapeutist in the sense of prescribing for patients at the bedside. I am not in the practice of medicine, as I clearly stated in my qualifications.

Q.—You mean that you are just a theorist? *A.*—No, I am not a theorist, I am a practical man.

Q.—You are more than a theorist? *A.*—Yes, sir, absolutely.

Q.—You are just a theorist so far as therapeutics and gynecology are concerned, aren't you? *A.*—As far as therapeutics rest on the action of drugs, and the effect which drugs may have and as regards the effects which drugs may produce in man, and on the higher animals, I am an expert.

Q.—Well, now, you should know, of course, under those circumstances, the various things which produce amenorrhea. *A.*—Not at all, unless they are produced by drugs.

Q.—Well, a cold might produce amenorrhea, might it not? *A.*—A cold?

Q.—Yes. *A.*—Not to my knowledge, but as I say, I am not an expert in that phase of the work. My work deals with the action of drugs.

Q.—Would a man have to be an expert in order to know what some of the causes of amenorrhea are? *A.*—I think he would undoubtedly have to be an expert to know what the causes of some forms of amenorrhea are.

Q.—Do you know of anything that causes amenorrhea? *A.*—Pardon me?

Q.—Do you know of anything that causes amenorrhea? *A.*—Oh, yes.

Q.—What? *A.*—Amenorrhea may be caused, as I say—I preface all of my remarks again in this respect by saying I am not an expert in this line, and that what I say is not authoritative?

Q.—Didn't you qualify as a therapeutist? *A.*—I qualified as a therapeutist, yes.

Q.—Then you ought to know it? *A.*—No, not necessarily. Therapeutics does not deal with the causes of disease, all the possible causes of disease or diseased conditions.

Q.—It deals with the treatment of disease, don't it? *A.*—It does.

Q.—Then you think it is perfectly competent for a man to treat a disease without knowing anything about the cause of it? *A.*—It may or it may not be. He is certainly in a much better position to treat it if he knows the cause of it.

Q.—Don't you think it would be practicing a fraud on his patient if he undertook to treat it without knowing the cause? *A.*—No, because in many cases they have to work on them without knowing the cause, and there are many cases where the cause is not known at the present time.

CAUSES OF AMENORRHEA

Q.—How many causes do you know that produce amenorrhea?

Mr. T. J. Scofield:—That is objected to.

Mr. Hough:—That is the same question I originally asked.

THE COURT:—He may answer.

To which ruling of the court the defendants, etc., excepted.

A.—Amenorrhea may be caused by any condition which results in anemia of a marked grade. For instance, amenorrhea may occur as the result of blood destruction associated with the disease malaria. Amenorrhea may result from an extensive loss of blood by hemorrhage or repeated hemorrhage such as might occur from an intestinal parasite which was removing blood from the blood vessels.

Mr. Hough: Q.—Do you mean uterine hemorrhages? *A.*—No, I am talking about the extraction of blood through the action of an intestinal parasite, such as is the case in hookworm and various intestinal parasites taking blood from the intestinal wall and giving rise to anemia in consequence thereof. I am merely reciting some of the causes of anemia. Amenorrhea results from the disease of anemia itself, that is to say, chlorosis, a pernicious anemia and all the different types of anemia will result in amenorrhea or may result in amenorrhea. Furthermore, amenorrhea may be the result of a deformed uterus.

Q.—Of a which? *A.*—Of a deformed uterus.

Q.—No, I did not understand the first syllable. *A.*—A deformity of the uterus. It may result from an infantile type of uterus and there are cases, I suppose, on record that have never menstruated. Of course, different women undergo the changes of life at different times. For instance, women who apparently have been normal, have undergone the change of life I think before 30 years. The cause of the sudden or premature ending of sexual life or menstruation, rather in women, is not known. Those are certain of the causes of amenorrhea.

Q.—Now, you would not say those were all the causes of amenorrhea, would you? *A.*—I presume there are others.

Q.—In other words, stenosis may produce amenorrhea? *A.*—Possibly.

Q.—That is closing of the cervix of the womb? *A.*—Possibly.

Q.—So that it won't let the blood out? *A.*—Yes.

Q.—And congestion—I mean inflammation would cause it? *A.*—Inflammation I should say. Of course it depends on the type, but if it results in congestion of the uterus, it will probably increase in so far as it does cause congestion of the uterus, it will probably increase the menstrual flow.

Q.—Does it never produce amenorrhea? *A.*—I could not say about that.

Q.—What would you say as to metritis, does that ever produce amenorrhea? *A.*—I could not say as to that.

Q.—What would you say as to endometritis? *A.*—I could not say as to that.

Q.—What would you say as to inflammation of the fallopian tube? *A.*—I could not say about that.

Q.—What would you say as to ovaritis? *A.*—I should say in general in regard to all inflammatory conditions of the pelvic viscera and so forth that in so far as they tend to make a person anemic they would tend to produce amenorrhea. In so far as they tend to congestive processes they would result in an increase of the menstrual flow.

Q.—Haven't you put the cart before the horse? In other words, isn't it amenorrhea that produces anemia? *A.*—I think not.

Q.—Did you never hear of amenorrhea producing anemia? *A.*—I did not.

CAUSES OF MENORRHAGIA

Q.—How many causes of menorrhagia, which is flooding? *A.*—Menorrhagia may be produced by a large number of different causes. It may be a very early symptom of cancer. It may be a symptom of the fibroid tumors which occur in the uterine wall. It may be attributable to inflammatory conditions which may lacerate a blood vessel and cause a uterine hemorrhage. These are certain of the conditions which would produce metrorrhagia or menorrhagia.

Q.—Are you sure that menorrhagia is any indication of cancer? Don't you mean dysmenorrhea? *A.*—No, I mean menorrhagia.

Q.—Is dysmenorrhea an indication of cancer? *A.*—It may or may not be, I am not certain of that.

Q.—But you are positive that menorrhagia is? *A.*—It occurs sometimes in cancer, as an early symptom.

Q.—More frequently such a thing occurs with dysmenorrhea? Is it more frequently or less than in cases of dysmenorrhea? *A.*—I think more frequently, but I am not absolutely sure.

Q.—Well now, what would produce dysmenorrhea?

THE COURT:—What is the purpose of this line of examination? The witness has qualified as a basis of his opinion evidence here, and he disclaimed any general knowledge of this subject and has defined very carefully the subjects on which he testifies as an expert. He has not testified as an expert on those subjects.

Mr. Hough:—I understand that he did qualify as a therapeutist.

THE COURT:—Yes.

Mr. Hough:—And then he has stated that he—

THE COURT:—But he has also limited himself as to that.

Mr. Walker:—May I make one suggestion as to why this is competent? The witness qualified and testified to the influence of drugs in the case of amenorrhea and menorrhagia and so stated on direct examination by denying that a given drug could act where symptoms were displayed that were different like menorrhagia and amenorrhea or metrorrhagia or dysmenorrhea and he qualified on that and gave an opinion on it on direct.

THE COURT:—I don't recollect that.

Mr. Walker:—Well, it is in there and the witness I think will remember that he gave it.

THE COURT:—If that is the fact you may go on with the cross-examination.

The Witness:—If I may explain my position, since it involves an answer that I gave, I prefaced my statement on this subject—

Mr. Walker:—Wait, I object. Is he answering me now?

Mr. T. J. Scofield:—I insist that he be allowed to explain.

Mr. Walker:—Is he answering the pending question, or is he discussing what I said to the Court, or is he answering Mr. Hough.

THE COURT:—My proposition is just this; that it seems to me that no amount of cross-examination tending to limit the knowledge of the witness is going to be half so effective as the witness's frank confession of his own limitations.

Mr. Walker:—I understand he has made his limitations, but he did qualify and testify as to the effect of drugs when used in these conditions.

Mr. Hough:—I won't press the inquiry further, if he says he does not know.

Questions were then asked concerning the United States Pharmacopeia and the significance of mention of a drug in the Pharmacopeia. He was then asked:

THE PHARMACOPEIA

Q.—How many drugs in the pharmacopeia in your opinion are absolutely worthless? *A.*—I have never counted them.

Q.—100? *A.*—I have never counted them.

Q.—Have you ever looked at it at all? *A.*—I have looked at it to this extent, that I have a list of drugs that I give to my students on which I tell them that they will be examined at the end of their course, containing possibly—I do not recall, but maybe somewhere between 100 and 250 titles, whereas the total number of titles in the pharmacopeia, as I recall, is something between 900 and 1000.

Q.—So that in your opinion, there are about 600 in the pharmacopeia that are absolutely worthless? *A.*—I did not say that.

Q.—That ought not to be regarded as reputable drugs? *A.*—I did not say that.

Q.—What do you say about the other 600? *A.*—I say that to my mind they are unimportant, that is, there are other drugs equally well known or better known that accomplish the same things and that in some cases these others are worthless drugs which I do not care to have them spend their time on. I would rather have them spend their time on drugs that are undoubtedly useful and have been clearly worked out by accurate clinical methods and shown to be useful in the treatment of disease.

Q.—Do you mean by "clinical methods" pharmacological methods? *A.*—I mean there is no difference between a careful clinical test and a careful pharmacological test. If a man in the clinic makes a test, for instance, or wants to determine whether Wine of Cardui is useful, how would such a test be made? You would take a certain number of cases, perhaps 50 cases of amenorrhea, or of increased flow, and divide them into two sets. You treat 25 with Wine of Cardui, and keep the others without it, and then make an estimate of the amount of material passed at the menstrual period, and there would be absolutely no difference in such an experiment and in an animal test. That is, you do everything to control the test. You would know whether your drug was accomplishing anything, and you would arrive at the same facts and they would be as valuable as the facts of any animal experiment whatever. In other words, it is simply careful observation, ruling out chance and is not a question of opinion, such as where you ask a woman how many napkins there were, or something of that kind, and know nothing about what the actual facts are.

Q.—You mean that the physician would use Wine of Cardui in 50 cases of amenorrhea and get satisfactory results in time, that he would be justified in believing that the results would be due to the Wine of Cardui? *A.*—It would depend entirely on how the results were controlled. It would depend entirely on whether he was relying on what the patient said to him or what he knew; whether the patients were in a hospital and being watched by nurses or whether they were in their homes. It would depend on an equal number of cases not being treated with Wine of Cardui in order to see what they did.

Q.—How many drugs are regarded by you as possessing any therapeutic value, which had not been proven pharmacologically? *A.*—No drug is known as far as I am aware, which is useful in the treatment of disease which, in an appropriate pharmacological test, shows itself to be absolutely negative in all regards. That is to say, no drug is known to be useful in the treatment of any diseased conditions in man or animals, if you want to put it that way, which on proper pharmacological experiments, shows no action in the way that is either therapeutic or toxic or anything else, in properly arranged animal experiments. There is no case known.

Q.—Do you know of any substance then which will affect human beings but which has no effect on the lower animals? *A.*—I have no knowledge of such a substance.

The witness was then asked concerning the relation of the flea and the rat to bubonic plague and of the mosquito to malaria. He was asked concerning the effects of injecting bread into the veins or arteries of a dog. He was also asked:

Q.—Do you know of any other substances which will affect the human being, and which have no action on the lower animals? *A.*—I have not mentioned any substances yet.

Q.—Haven't you? *A.*—No.

Q.—Well, morphin don't affect a dog like it affects a human being, does it? *A.*—Very much the same, very much the same indeed.

Q.—How much more morphin does the dog take than the man? *A.*—To get the depressant action on the dog, the thing you see in the man, requires approximately the same dose, that is to say, without taking into consideration the difference in weight; half a grain of morphin, which is a large dose for a man, will stupefy a dog as it does the man, and render him very oblivious to his surroundings, as it does the human being.

Q.—Then any doctor, who says that you can feed a dog morphin and he will lick his chops and ask for more, does not know what he is talking about? *A.*—He positively does know what he is talking about. So does a man lick his chops and ask for more in a given length of time when the effect of the morphin passes off.

Q.—The dog don't take his as a habit, does he? *A.*—The dog can develop a habit, just as a man can, for morphin.

Q.—In the case I am citing I don't— *A.*—You are not citing any case, so far as I am aware.

Q.—I am talking about the first time you give it to a dog. *A.*—The first time you give a dose of any drug to any animal or to a man, he has no habit for it. He has to take it some time before he develops a habit, that is obvious?

Q.—But the first time you give it to him, it don't have the same effect on him that it has on the human, does it? *A.*—It has very much the same action on a dog. There are certain minor differences.

Q.—Do any authorities make that statement? *A.*—I don't know whether they do or not.

Q.—Don't the textbooks on the subjects make a contrary statement. *A.*—I think not. Having seen the action of morphin on some hundreds of dogs, I feel quite confident to say that the action, the first time you give it, give a dose to a dog, is not vastly different from the first time you give it to a man.

Q.—Would you say it is precisely the same? *A.*—No, it is not precisely the same. There are certain features that dogs show that men do not.

Q.—What about giving arsenic to a hog? *A.*—I have never given arsenic to a hog, I have never seen it given.

Q.—You have heard that hogs take arsenic without any bad effect, have you not? A.—I think it depends altogether on the form in which the arsenic is given, and the dose in which it is given.

Q.—I say, have you heard that a hog will take arsenic in quantities which would kill a man, without any effect? A.—No, I have not heard anything about it.

Q.—What is the dose of adrenalin chlorid? A.—The dose of adrenalin chlorid varies according to its method of administration. The dose when injected directly into the veins is very much smaller than when given subcutaneously, and the intramuscular dose is between the two.

Q.—How much is the dose when injected into the vein? A.—It depends on the condition of the patient, and what you hope to accomplish by giving it.

Q.—What is the minimum dose, so far as you know? A.—The minimum dose is very small. I do not know how small it has been used. You see we have no official standard for it. I mean to say the pharmacopeia does not contain the drug, adrenalin.

Q.—Is it as little as one one thousandth of a grain? A.—No, not that I know of.

Q.—Is it as much as one grain? A.—No, it is less than one grain.

Q.—How near to one one thousandth of a grain? A.—Well, one one thousandth of a grain would be a very small dose, very small dose.

Q.—Assuming that the synthetic product which you call "A" contained 6.34 grains of viburnum prunifolium, and that the dosage was a tablespoonful, how much of viburnum would a person get at a dose? A.—That depends entirely on what you are talking about; it depends entirely whether you are talking about the whole plant or the part of the plant that is extracted by 20 per cent. alcohol.

Q.—I am talking about viburnum prunifolium as you understand it, if I speak of the fluid extract of viburnum prunifolium. A.—In that case and taking as the basis for the determination the valerianate contained, I would have to figure out the corresponding amount.

The further hearing of the cause was adjourned until 2 o'clock the same day.

April 3, Afternoon

The Court met pursuant to adjournment. Dr. Arthur S. Loevenhart resumed the stand.

CROSS-EXAMINATION BY MR. HOUGH (CONTINUED)

He answered the pending question stating:

Q.—What is the answer? A.—If we accept as the characteristic ingredient of the extract of viburnum prunifolium the resin, then Wine of Cardui, or the synthetic preparation, contains none of it, virtually none. As it is in my hands, none. I found no resin. If we consider the characteristic ingredient the valerianate, then basing the computation on Mr. Leech's determination, about two gallons and a half to three gallons of Wine of Cardui or the synthetic preparation would contain a medicinal dose, or legal dose.

Mr. Hough asked that the answer be stricken out as not responsive. The Court ruled that parts of it were, and proper. An agreement was made by the attorney for the plaintiff and the Court concerning the question. Mr. Hough stating:

Mr. Hough:—No, your Honor, what was meant was when the report was made to him as to what it contained. He received a synthetic product which he is told contains 20 per cent. alcohol and 57 and a fraction, as I recall, grains per fluid ounce, of carduus benedictus, and 6.34 grains per fluid ounce of viburnum prunifolium. Now that is a definite and distinct and accurate statement that does not require any circumlocution to understand what that means. Now I asked him: Assuming that that contained that much, how much would a person—how many grains will a person get of the viburnum prunifolium in one dose, assuming the dose to be a tablespoonful?

THE COURT:—He may answer that, if he knows.

The Witness:—I can answer it if you permit me an explanation.

Mr. Walker:—No.

Mr. Hough:—Just answer.

THE COURT:—Just give your answer first and then explain it.

The Witness:—Yes. Will you please read the last part of the question?

(Last question read.)

The Witness:—He would obtain about three grains of viburnum prunifolium, assuming that the material contained six grains and a fraction to the ounce, and assuming that he took half an ounce, or one tablespoonful, he would get something over three grains.

Mr. Hough:—Three and seventeen one-hundredths? A.—Yes. It is very simple. I can explain it.

Mr. Hough:—There is nothing to explain.

THE COURT:—I told the witness to explain.

Mr. Hough:—I object to his making a speech to the jury every time—

THE COURT:—You may save the point. Let us have the explanation.

To which ruling of the Court the plaintiffs, etc., excepted.

The Witness:—If you try to extract six grains of gold with an ounce of water and you pour that water over the six grains of gold, you haven't got in your water six grains of gold, because it is not dissolved in it, and you can't say that you have it. If you do state it, you state a falsehood. This material did not contain 6.34 grains of viburnum, but the ounce of water was poured over the 6.34 grains of viburnum. Now if it had dissolved the whole business, a half an ounce would have contained a half of 6.34 grains, namely, 3.17 grains. But it did not dissolve it, and therefore to state that it did dissolve it would be a falsehood, just as it would if you poured that much over the gold and say that the solution contained that much gold. And you cannot compare it with the amount of gold you would take if you would swallow 6.34 grains of gold, except by making a determination of how much the water dissolved.

Mr. Hough:—I ask that the explanation be stricken out as not pertinent to the inquiry, because my question assumed a definite fact.

THE COURT:—No. I think your question did not, Mr. Hough. The answer may stand. Because you assumed in your question that the amount of viburnum prunifolium was a definite amount. This witness says that in the synthetic composition that he had it did not contain such an amount because it could not. That the 20 per cent. alcohol solution would not take it up.

Mr. Hough:—My question assumed that it did contain; that was the assumption.

THE COURT:—Well then, you have an answer to the question. I think that the explanation on other branches of the examination is quite pertinent. I will let it stand.

To which ruling of the Court the plaintiffs, etc., excepted.

The witness was then asked concerning the dose of carduus benedictus which a person would receive on the same assumption and also concerning the various constituents of carduus benedictus and viburnum present and not present in the 20 per cent. alcohol preparation. He was then asked:

Q.—Now, Doctor, if you had injected into that dog the proportionate dose of iron would it have made any difference whatever in those on your chart? A.—It would depend in what form the iron was injected, very lately.

Q.—Well, I am talking about the dose in which it is usually given for these uterine troubles, and the form in which it is given for those things? Would it have made any difference whatever in that chart? A.—I have never injected any iron into a vein directly, in any quantity.

Q.—You mean you don't know? A.—I have never done it. I don't know from my own experience.

Q.—Don't you know that it is stated that it would not make any difference? A.—No, I have never seen the statement that it would not make any difference.

Q.—Don't you know that it would not make any difference? A.—No, sir; I don't know.

Q.—Don't you believe that it would not make any difference? A.—It would depend, as I say, on the form in which the iron was administered, the particular compound of iron you are referring to.

Q.—You know what I am referring to, don't you? A.—No, I don't.

Q.—I am referring to the form of iron in which it is given for these uterine troubles. A.—But it is used in many forms of anemia.

Q.—That is the best answer you can give? A.—That is the best answer I can give.

REDIRECT EXAMINATION BY MR. T. J. SCOFIELD

Q.—I will ask you, Doctor, whether or not iron is given as a uterine remedy other than as a tonic? Or blood builder? A.—As far as I know iron is not used in general in uterine conditions except when they are secondary to anemia or loss of blood, and where the iron is given to increase the blood formation and removing the cause therefore of the uterine disability or disease.

Q.—Now, Doctor, you stated that you did not consider Dr. Kelly an authority upon certain things concerning which you have been interrogated here. I will ask you whether or not there is any authority in science? A.—The only authority in science is fact.

Q.—And what? A.—Is fact. That is to say, no one's word is taken as an authority. His experiments may be considered and his veracity accepted, but the same critical examination will be made of the results of any man. No man is an authority in science. No man's word is taken.

PRESCRIBING VIBURNUM

Q.—You also stated that you do not consider the prescribing of fluid extract of viburnum prunifolium as vicious. Why not? A.—To my mind a physician who prescribed a fluid extract of viburnum prunifolium, although of course it contains 55 per cent. alcohol, is not vicious, but any physician or pharmacologist or chemist or druggist who advertised the fluid extract of viburnum to cure things which it cannot cure and advised its being taken by them, by people, for conditions which may be serious and endanger their lives, without a medical examination, would be guilty of a vicious fraud. It makes no difference what line of work he is in, that fact would make it so, to my mind, and in my opinion. Now the second point is this: That it contains the minimum amount of alcohol per dose. It is evidently not a preparation which the person would take for the alcohol. The amount of resins, etc., whether active or not is maximum for the amount of alcohol which the person actually gets. In other words, the alcohol is proportionately much smaller. I think that answers it.

Q.—You stated, doctor, in response to a question by Mr. Hough, that in cases of malaria, quinin is given, that is, in amenorrhea which

comes from malaria. Now are there other symptoms of malaria which are helped by quinin? *A.*—The symptoms of malaria are helped by quinin, and quinin is given in malarial fever to cure the malaria, to kill the malarial parasite which is in the blood, and therefore all the symptoms which are produced by it will be alleviated by the quinin, which is a specific remedy for malaria. The amenorrhea will be improved, the chills will be lessened, the fever will be lessened—all the symptoms. Amenorrhea is only one of the symptoms which occurs in the female in a certain number of cases. The quinin is given not for the dysmenorrhea or the amenorrhea, but to remove the cause of them, and to cure all the other symptoms of the disease as well.

Q.—Now, what is the cause of malaria? *A.*—Malaria is caused by an organism that inhabits the red blood cells in the blood, the circulating blood.

Q.—What is the effect of quinin upon that organism? *A.*—It destroys the organism, kills it.

Q.—So that the object of the quinin is to destroy the cause of these various things? *A.*—Yes, it is a specific poison for the malarial parasite which you can use without injuring the health of the person.

Q.—And when the malarial parasite is killed these conditions which it produces disappear? *A.*—Yes, sir.

TESTIMONY OF DR. LILLIAN H. SOUTH

Dr. Lillian H. South was called as a witness for the defendants.

DIRECT EXAMINATION BY MR. T. J. SCOFIELD

Dr. Lillian H. South testified that she is a physician and surgeon residing in Bowling Green, Ky. She purchased Wine of Cardui at a drug store in Bowling Green and administered it to three cases. The first case was a woman about 43 years with a slight retroversion. She complained of flooding at the period and bleeding or flowing between the periods. On examination Dr. South found this slightly retroverted uterus, rather a large cervix and an endometritis. She continued:

A.—I made the diagnosis in this case of pre-cancerous stage, and advised her to have an operation. This she declined to do, and asked me if I would give her some medicine for the trouble. I gave her, without her knowing what she was taking, Wine of Cardui, not in the original bottle. She sent down to my office and I gave this bottle to the messenger and instructed her to take this probably three days before her time for her period, and during this flooding. I do not remember the exact amount that I poured into this bottle. I just simply took one of the bottles from the laboratory. And I did not see this patient again until several weeks later. In the meantime she had secured another physician and this other physician brought her to me and to our firm for an operation, and I was present and assisted at this operation, and at the examination of the tissues after the operation it showed that this woman was suffering from, as I said — the diagnosis being made of pre-cancerous condition. If this had gone on longer probably she would have had eventually a cancer.

Q.—Now what was the operation? *A.*—I advised her in the beginning to have this operation known as curettement — a scraping of the womb, so that if there was any cancerous tissue there it could easily be detected by a microscopic examination. I explained this to her very carefully. We found an erosion inside of the mouth of the womb.

Q.—What do you mean by that? *A.*—That means a little sore, a little bleeding place, a little ulcer, as it were. And that was carefully scraped out, and these scrapings were analyzed under the microscope. And the woman has entirely recovered. She has had no more bleeding at her periods, or no more excessive bleeding at her periods, or bleeding between the periods.

Q.—Do you occupy any official position down there in Kentucky? *A.*—Yes, sir.

Q.—What is it? *A.*—I am state bacteriologist of the state of Kentucky.

Q.—Now Doctor, you say that an analysis was made of the material which you reserved from the little sore which you speak of as an erosion. Who made that analysis? *A.*—Dr. William Welch of Johns Hopkins.

Q.—Can you tell us now about the second case that you referred to? Well, wait just a moment. What was the effect of the Wine of Cardui which was administered there? *A.*—It had no effect on her whatever, so she—

Q.—You had examined her twice, had you; at the time you gave it to her?— *A.*—Yes, sir.

Q.—and then subsequently when she came to the office? *A.*—Yes, the same conditions were present at the operation.

Q.—Now, take the second case, doctor. *A.*—The next case was in a woman who had her periods at irregular intervals. Probably in fifteen months she had had her periods three times. She had also had a discharge from the vagina, what we call leukorrhea, and a burning and itching around there, and irregular bleeding; that is, she had had, as I said before, this period twice or three times in about fifteen months. I gave her the Wine of Cardui and she knew what she was taking, and I gave it out of the original bottle. She took two or three bottles without any effect.

Q.—In what way did she take it? According to directions? *A.*—She took it according to directions on the bottle: A tablespoonful three times a day.

Q.—Did you see her after that? *A.*—I saw her constantly, every day.

Q.—How long did she continue to take the Cardui, about? *A.*—She probably has taken four or five bottles.

Q.—All together? *A.*—Yes, over a period of about, I should say, four months.

Q.—During that period when she was taking Wine of Cardui was there any change in the history of her trouble? *A.*—No, none whatever.

Q.—I will ask you then, whether or not the Wine of Cardui improved her condition? *A.*—It did not improve her condition.

Q.—You spoke of the third case, Doctor, that you treated? *A.*—The third case was in a woman about 38 years of age that had had six children, and upon examination showed a tumor.

Q.—How is that? *A.*—Upon examination showed a tumor.

Q.—A tumor? *A.*—Yes. A tumor of the womb, what we call a fibroid inside of the womb. She had very profuse hemorrhages for about six months, so much so that when she was brought under my observation she was exceedingly pale and almost bloodless. She had taken twelve bottles of Wine of Cardui without any effect upon the bleeding. This tumor was about the size of a cocoanut, and was removed, and this patient has been entirely relieved.

Q.—Had she been taking the Wine of Cardui according to directions? *A.*—She had taken it according to the directions on the bottle, and taken about twelve bottles.

Q.—What was the effect of it? *A.*—It had no effect on her. She gradually became worse.

Q.—I will ask you now, Doctor, whether any other cases have come under your observation in which you were using Wine of Cardui for female troubles? *A.*—In my examinations, and in the position I hold I come in contact with quite a good many sick women, and in the course of the history that I take I ask them what treatment they have had, or what they have done for themselves for this condition, and I frequently gain that information, that they have taken Wine of Cardui. I cannot recall exactly how many, but over quite a period of years I have gained this information from these women from time to time.

Q.—That is, in the course of your work? *A.*—Of my practice.

Q.—As a state bacteriologist? *A.*—In the course of my work as a physician.

Q.—How many years have you been practicing, Doctor? *A.*—Since 1904.

Mr. T. J. Scofield:—That is all.

CROSS-EXAMINATION BY MR. HOUGH

Q.—You are associated with Dr. McCormack, are you? *A.*—Yes, sir.

Q.—He is representing the AMERICAN MEDICAL ASSOCIATION? *A.*—No, sir.

Q.—Isn't he the so-called walking delegate for the AMERICAN MEDICAL ASSOCIATION?

Mr. T. J. Scofield:—I object to that question, if the Court please.

THE COURT:—We haven't had anything about that yet. We don't know what one is in this case.

Mr. T. J. Scofield:—We don't know anything about such a thing. You can probably tell us.

Mr. Hough:—I am trying to identify him.

Mr. Walker:—May be the witness may have some information on that.

Mr. T. J. Scofield:—Well, we will withdraw that objection if he wants to put such a question, if he thinks that is a gentlemanly thing to do.

Mr. Walker:—What is there ungentlemanly about it?

THE COURT:—Let us get on to another question, Mr. Hough.

The Witness:—Dr. McCormack has been called the walking delegate of the AMERICAN MEDICAL ASSOCIATION by the patent medicine and fraudulent medicine manufacturers, but he is not in any way connected with the AMERICAN MEDICAL ASSOCIATION.

The witness was then asked as to whether her office was in any way connected with that of Dr. Heizer to which she answered that it was not. She was then asked:

Q.—Who was the first woman? White or black? *A.*—The first case was white that I reported.

Q.—She was 43 years old, you say? *A.*—I say the first case that I reported was the white case.

Q.—43 years old? *A.*—Yes, about 43.

Q.—And you diagnosed her case correctly? *A.*—Yes, sir.

Q.—And having diagnosed the case, and she asked you for medicine, you gave her Wine of Cardui? *A.*—Because she refused to do what I requested her to do, and I gave her this medicine. She didn't know what she was taking.

Q.—But you had told her it was a case requiring an operation, had you? *A.*—I told her if she wanted to be cured—

Q.—It would require an operation? *A.*—It would require this treatment.

Q.—And you knew that Wine of Cardui was advertised not to be good for any case which required a surgical operation?

Mr. T. J. Scofield:—Now wait a minute. If the Court please—well, I withdraw the objection.

Mr. Hough: Q.—You knew that? *A.*—No, I didn't know that.

Q.—You read it on the bottle, didn't you? *A.*—Well, I do not recall reading that, if it is.

Q.—It was also on the carton of the bottle as well as on the label on the bottle? *A.*—Well, I reckon that it was.

Q.—And knowing that it was not recommended for any case requiring a surgical operation you gave that? *A.*—I gave it because it was

recommended for bleeding at the periods and bleeding between the periods.

Q.—Provided it was not something which required a surgical operation. Now, in the third case you diagnosed it and told the woman that it was an operative case, didn't you? *A.*—Yes, sir.

Q.—And knowing that it was an operative case and that the Wine of Cardui was not recommended for that, you gave her Wine of Cardui? *A.*—She had taken this Wine of Cardui several times — long before she was told that.

Q.—Well, why did you give it to her then any longer? *A.*—I didn't give it to her. I said this case was under my personal observation when she had taken Wine of Cardui. She told me of her taking Wine of Cardui.

Q.—You don't know anything about her taking Wine of Cardui then except what she told you? *A.*—She told me that she had taken Wine of Cardui. In the history she gave she told me. I asked her distinctly how much she had taken, and she remembered distinctly that she had taken twelve bottles of Wine of Cardui.

Mr. Walker:—I ask that that be stricken out as incompetent, your Honor.

THE COURT:—It may be stricken out.

Mr. Walker:—The court said it might be stricken out, that third illustration, where she didn't know it herself, where she was told about it.

THE COURT:—Limiting it solely as to what the patient told the doctor as to what she had taken, and the amount. That is stricken out.

Mr. Walker:—As to the third illustration the doctor has no personal knowledge of it except what she was told.

THE COURT:—I was surprised that you didn't ask to have it stricken out at the time she made the statement.

Mr. Walker:—All right. Well, that is out then.

Mr. Hough: *Q.*—Now, your second case you say was just leukorrhea? *A.*—No, I didn't say just leukorrhea. I said she had leukorrhea.

Q.—You gave her Wine of Cardui in that case, didn't you? *A.*—Yes, sir; I gave her Wine of Cardui.

Q.—For how long did you give it to her? *A.*—She took Wine of Cardui over a period of about four months.

Q.—Was she white or black? *A.*—She was black.

Q.—Was she your cook? *A.*—Yes.

Q.—And after you gave it to her four months, what treatment did you then give her? *A.*—She did not take anything except the local treatments.

Q.—And she got well? *A.*—No, she has not gotten well.

Q.—She has not gotten well yet? *A.*—No, I did not give her the Wine of Cardui to act on the leukorrhea. I said she would not have her periods, only twice in fifteen months.

Q.—You gave it to her for that? *A.*—Yes, sir.

Q.—Were her periods established? *A.*—During those fifteen months she had had her periods twice.

Q.—And then you commenced to give her Wine of Cardui? *A.*—She had taken Wine of Cardui over a period of about four months.

Q.—Before you commenced to give it to her — that was after you commenced to give it to her? *A.*—Why, she took it when I gave it to her.

Q.—That is what I mean. *A.*—Yes.

Q.—She took it because you gave it to her? *A.*—Yes, sir.

Q.—And how old was she? *A.*—She is about 46, I believe.

Q.—She was at the menopause, wasn't she? *A.*—Well, we suspected that. She had irregular periods.

Q.—And of course you would not expect it to restore those periods at the menopause, would you? *A.*—She was more irregular.

Q.—Did she have any pain? *A.*—She suffered with backache at times.

Q.—Did it help her backaches? *A.*—No.

Q.—Did it have any effect on her whatever? *A.*—No.

Q.—And at the end of four months she quit? *A.*—Quit taking the Wine of Cardui?

Q.—Yes. *A.*—She may be taking some now for all I know. I didn't give her any more.

Q.—Well, but don't you know? Don't you know? *A.*—No, sir.

Q.—Did you give her any other medicine? *A.*—No.

Q.—Is she any better than she was? *A.*—She is just about the same.

Q.—And she is still in your employ? *A.*—Yes. I treated her for the leukorrhea since then. I gave her local applications for that.

Mr. Hough:—That is all.

REDIRECT EXAMINATION BY MR. T. J. SCOFIELD

Q.—Just one moment. He asked you about Dr. McCormack. What is Dr. McCormack? What position is he in? *A.*—He has no position connected with the AMERICAN MEDICAL ASSOCIATION.

Q.—I mean in Kentucky? *A.*—Yes.

Q.—What is he there? *A.*—Dr. J. H. McCormack, he is the chief sanitary inspector of the State of Kentucky.

TESTIMONY OF MR. J. V. GRANGER

Mr. J. V. Granger was called as a witness on behalf of the defendants.

DIRECT EXAMINATION BY MR. J. B. SIZER

Mr. Josh V. Granger testified that he has been residing in Cottonwood, Houston County, Alabama, near the Florida line; that he is 47 years old; that his occupation is farming. Continuing:

Q.—Do you know of a preparation known as McElree's Wine of Cardui? *A.*—Why, yes, sir.

Q.—Did you ever take any of it? *A.*—Why, I have drunk some of it.

Mr. Walker:—That is objected to.

THE COURT:—What is the objection?

Mr. Walker:—Why, we do not recommend Wine of Cardui for men.

THE COURT:—He may answer.

Mr. Sizer: *Q.*—What was your answer, Mr. Granger? *A.*—I said I drank some of it.

Q.—You have drank some of it? *A.*—Yes.

Q.—How did you happen to drink it?

Mr. Walker:—That is objected to.

THE COURT:—The objection is sustained.

Mr. Sizer:—You say you have drank some of it? *A.*—Yes, sir.

Q.—When? *A.*—About five years ago.

Q.—What were the circumstances under which you drank it?

Mr. Walker:—Objected to.

THE COURT:—He may answer.

To which ruling of the court the plaintiffs, etc., excepted.

The Witness:—Why, how came I to drink it? Why, the other people around got to using it. In fact, I was—

Mr. Walker:—I move it be stricken out.

The Witness:—my wife was taking of it and they got to drinking it and insisted on me drinking with them, and I finally got to tasting of it, and they told me it wouldn't hurt me, and I told them I thought it was a medicine.

THE COURT:—Strike out what they told you.

Mr. Sizer: *Q.*—Don't tell what they told you, just tell what you did with it? *A.*—Well, I drank it.

Mr. Sizer: *Q.*—How much—

Mr. Walker:—Wait a minute. I move that answer be stricken out.

THE COURT: *Q.*—Except that he drank. Were you ill at the time that you took it, or did you take it as a beverage? *A.*—I drank it as a beverage.

THE COURT: *Q.*—Well, how long have you been drinking it that way, or did you drink it? *A.*—Why, two or three years off and on.

Mr. Sizer: *Q.*—Is that a prohibition country down there, Mr. Granger?

Mr. Walker:—Just a minute. I move that the answer of the witness be stricken out, that he himself, drank it as a beverage.

THE COURT:—That may stand.

To which ruling of the court the plaintiffs, etc., excepted.

Mr. Walker:—And I move that that part of his answer, if your Honor please, which included what people were doing in the neighborhood, or what he claimed they were doing, and that he drunk with the women, be stricken out.

THE COURT:—That may go out. But the other part may stand, with your exception to the question.

Mr. Sizer: *Q.*—Now I asked you whether or not that is a prohibition country down there where they do not sell regular liquors or whiskey? *A.*—Yes.

Mr. Walker:—Objected to.

THE COURT:—Objection sustained.

Mr. Sizer: *Q.*—Do you know anything about other people in the neighborhood drinking it? *A.*—Yes.

Mr. Walker:—Objected to.

THE COURT:—Why, we are getting afield here, gentlemen.

Mr. Sizer:—If your Honor please—

THE COURT:—Whether or not this article states the truth when it says Wine of Cardui is booze does not depend upon who uses it, but what is in it.

Mr. Sizer:—It depends, if your Honor please, somewhat, as I submit, on the extent to which it is used. They say it is not booze or a tipple because they cannot drink it. Now if we can prove that it is used promiscuously by people throughout the country as a substitute for intoxicating liquors, I submit that bears on the issue of whether or not it is a booze or a tipple.

THE COURT:—Why, the statement was made in Mr. Walker's opening statement that this would nauseate if taken in large quantities.

Mr. Sizer:—Yes.

THE COURT:—You may ask this question, if it nauseated him, or if he had seen other people take it and if they were nauseated or were not?

Mr. Sizer:—I propose to ask him that question, but I ask him now, according to the extent of his own knowledge, how much it was used by him and by others in his country?

Mr. Walker:—That is objected to because it is hearsay. If it is admissible at all it is admissible as to what he has seen others do.

THE COURT:—Limit it to his own knowledge, Mr. Walker.

Mr. Walker:—What he has seen people do, and not what has been heard by him.

THE COURT:—What he has seen.

Mr. Sizer:—I did not ask him to state what he had heard.

Q.—Do you know, Mr. Granger, whether or not this preparation has been used by other people in your country as a beverage? *A.*—It has.

Mr. Hough:—Just a minute. There is another objection, if your Honor please, and that is this: The statement is that this is a booze or a tipple for women, not for men, and they cannot justify by proving that some man or men drank it.

THE COURT:—I think we will pass that part for a moment. You may save that point.

To which ruling of the court the plaintiffs, etc., excepted.

Mr. Sizer:—Read the question.

(Last question read)

The Witness: *A.*—It is.

Mr. Sizer: *Q.*—Has it been used by a number or a few?

Mr. Walker:—That is objected to.

A.—A lot of them.

Mr. Sizer:—Of your own knowledge now, I am asking you from what you know of your own knowledge, if you know of it being used by a good many people or just a few?

Mr. Walker:—Objected to.

THE COURT: *Q.*—Tell us about how many you have seen; one or two or three or four or what? *A.*—A dozen or more.

THE COURT: *Q.*—What? *A.*—A dozen or more.

THE COURT: *Q.*—What were they, men or women or children? *A.*—Men.

Mr. Sizer:—I believe you said you bought it originally for your wife. Is that correct? *A.*—Yes, sir, I bought some for her.

Q.—Did she take a good deal of it?

Mr. Walker:—That is objected to.

THE COURT:—You need not go into that.

Mr. Sizer: *Q.*—Is your wife living or dead now? *A.*—She is dead.

Q.—How long has it been since you drank any of it, Mr. Granger? *A.*—About five years.

Q.—How did you happen to quit?

Mr. Walker:—That is objected to.

THE COURT:—Objection sustained. He may tell what, if any effect, it had on his system, if he knows.

Mr. Sizer:—Yes, sir, I am going to get to that.

Q.—What about the taste of Wine of Cardui? Is it pleasant to the taste or unpleasant?

Mr. Walker:—That is objected to.

Mr. Sizer:—Well, I am trying to get at—

Mr. Walker:—If it is admissible at all he can tell how it tasted.

Mr. Sizer:—Well that is what I asked him.

Mr. Walker:—No, you asked him whether to his taste it was pleasant or unpleasant.

Mr. Sizer:—All right.

Q.—How did it taste? *A.*—It tasted of a bitterish taste.

Q.—Did you have any difficulty in drinking it on account of the taste?

Mr. Walker:—That is objected to.

THE COURT:—What do you mean: "Difficulty"?

Mr. Sizer:—Well, I mean if your Honor please, whether the taste was so bad that he could not take it, as they contend.

THE COURT:—He said he did drink it.

Mr. Sizer:—Yes.

Q.—Well, was or was not the taste of such character as to prevent you or other people from drinking it as a beverage?

Mr. Walker:—Objected to.

THE COURT: *Q.*—You didn't have to make use of any mechanical means to force it down your throat? *A.*—No, sir.

Mr. Sizer: *Q.*—About how much did you drink, Mr. Granger, during the period that you did drink it? *A.*—Oh, I couldn't tell you. I drank it off and on, you know. I couldn't tell how much I would drink. Sometimes I would drink it off and on all day, and then again I may be wouldn't drink any more for a week, and then again may be I wouldn't drink any more in a month. I couldn't tell how much I would drink.

Q.—Are you accustomed to the use of intoxicating or alcoholic drinks, or were you at that time? *A.*—Yes.

Q.—Were you accustomed at that time to the use of alcoholic drinks? *A.*—Why I was — to some extent I were.

Q.—Did you know the effect of them? *A.*—Yes, sir.

Q.—Now what were the effects of Wine of Cardui as compared with the effects of other alcoholic substances?

Mr. Walker:—Objected to.

THE COURT:—On you?

Mr. Sizer: *Q.*—On you.

Mr. Walker:—Well, I don't know that he has testified that he ever took any other alcohol except Wine of Cardui.

THE COURT:—Yes, he said he did.

Mr. Walker:—He said he drank—

Mr. Hough:—The court understands we object to all of this testimony as incompetent, irrelevant and immaterial under their plea of justification.

THE COURT:—Yes.

Mr. Sizer:—Read the question.

(Question read.)

THE COURT:—Put another question, and ask him what effects he noticed from Wine of Cardui. We have had other evidence enough in the case to make the jury able to make the comparison.

Mr. Sizer:—I will put the question in that way.

Q.—What effect on yourself did you notice from the drinking of Wine of Cardui? *A.*—About the same thing as whiskey or any other drink, except it took more of it.

Q.—About how much more Wine of Cardui would you have to take to produce the same effect as a drink of whiskey?

Mr. Walker:—Objected to. That is on him?

THE COURT:—Objection sustained.

Mr. Sizer: *Q.*—Do they sell Wine of Cardui down in your country now, Mr. Granger?

A.—Not but very little.

Q.—Do you remember an occasion in which you and a number of other men drank a lot of Wine of Cardui at somebody's house down in your country?

Mr. Walker:—Objected to.

THE COURT:—What was the question?

(Question read.)

Mr. Sizer:—I want to prove the circumstances of a particular occurrence, may it please your Honor, in which he and a number of other men drank a lot of Wine of Cardui.

THE COURT:—I know, but now let us see if we cannot arrange this by an admission. Let me ask the attorneys for the plaintiff if a common human being could hold down enough of Wine of Cardui—if there is alcohol enough there to intoxicate?

Mr. Hough:—Yes, certainly, if he takes enough there is.

THE COURT:—Now if you propose to prove that a person could get drunk on Wine of Cardui—they could do it if they took enough.

Mr. Sizer:—But, your Honor, they say that they do not drink it as a beverage because it has nauseating or emetic effects, and that these are such that they cannot drink enough.

THE COURT:—Ask the witness how much he has ever seen any one human being take, and the jury can make up their minds what the effect will be.

Mr. Sizer:—Yes, sir.

Q.—How much have you drank in the course of a day, Mr. Granger, when you used to drink it?

THE COURT:—He has told us that. Now let us get down to this other.

Mr. Sizer: *Q.*—In the course of a day what is the most you ever drank, in the course of a day? *A.*—Why, I suppose a couple of bottles is as much as I ever drank myself. I have seen others drink more than that.

Q.—How much have you seen others drink in the course of a day? *A.*—Oh, two or three bottles. I have seen my brother drink a bottle of it running down and never took it from his head. Threw it right down.

Mr. Sizer: *A.*—And have you seen that done frequently or not?

Mr. Walker:—That is objected to.

THE COURT:—Objection sustained.

Mr. Sizer: *Q.*—How often have you seen that done?

Mr. Walker:—Objected to. Do you mean how often has he seen his brother take one bottle and throw it down without taking it away from his mouth?

Mr. Sizer:—How often has he seen others taking it in the course of a day?

Mr. Walker:—Objected to.

THE COURT:—He may answer.

To which ruling of the court the plaintiffs, etc., excepted.

The Witness:—Why, I disremember. I wouldn't say positive as to how many bottles I have seen others take. I have seen others drink heavy, and lots of it, but I wouldn't say as to how many bottles, for I don't remember. I wouldn't say positive how many that I had seen them drink, but I have seen them drink a sight of it.

Mr. Sizer: *Q.*—I believe you said it has been four or five years now since you drank any of it? *A.*—Yes, sir.

Q.—During how long a period of time were you addicted to the drinking of it?

Mr. Walker:—Objected to.

Mr. Sizer: *Q.*—How many years did you drink it habitually?

Mr. Walker:—Objected to.

The Witness:—Two or three years.

THE COURT:—Strike out the "habitually."

Mr. Sizer: *Q.*—How many years did you drink it?

Mr. Walker:—Objected to.

THE COURT:—He may answer.

To which ruling of the Court the plaintiffs, etc., excepted.

The Witness:—Two or three years.

Mr. Sizer: Q.—Two or three years. Do you drink any alcoholic beverages now, Mr. Granger, at all?

Mr. Walker:—Objected to.

THE COURT:—Objection sustained.

Mr. Sizer: Q.—Did the drinking of this Wine of Cardui ever nauseate you, Mr. Granger, and make you sick at the stomach?

Mr. Walker:—Objected to.

The Witness:—No, sir.

THE COURT:—That answer may stand.

To which ruling of the Court the plaintiffs, etc., excepted.

Mr. Sizer:—That is all.

CROSS-EXAMINATION BY MR. WALKER

Q.—Where do you live in Alabama? What is the county? A.—Houston county.

Q.—And when did you come to Chicago on this trip? A.—Today a week ago. I left home today a week ago, and got here Wednesday.

Q.—Last week Wednesday? A.—This Wednesday.

Q.—And when did you leave your home? A.—Monday.

Q.—Were you subpoenaed? A.—No, sir.

Q.—Who pays your expenses for coming here? A.—Why I don't know in particular.

Q.—Who told you they would pay the expenses? A.—Mister—Dr. Moody.

Q.—Who is Dr. Moody? A.—He is a doctor from our country.

Q.—From your town? A.—Yes, sir. He lives at Columbia now. He was at our town, at Cottonwood, but he lives at Columbia now.

Q.—Do you know Dr. Heizer? A.—Heizer?

Q.—Yes. A.—I think I have met him since I have been here.

Q.—Did you meet him in Alabama? A.—No, sir.

Q.—The man that you call Dr. Heizer, and that you have met here—A.—Yes, sir.

Q.—You never saw him in your state? A.—No, sir.

Q.—Is Dr. Moody in Chicago? A.—Yes, sir.

Q.—What has it been agreed to pay you for coming here? A.—He never said.

Q.—How much money have you received? A.—Not a bit.

Q.—Who paid for your railroad ticket? A.—Oh, I don't know, Mister—Dr. Moody got that.

Q.—Who is paying your hotel bill? A.—I suppose Dr. Moody is.

Q.—How much do you expect to be paid for coming up here?

Mr. Sizer:—I object to that, if your Honor please.

THE COURT:—Objection sustained.

Mr. Walker: Q.—What is your idea that you should be paid for your service in coming up here?

Mr. Sizer:—I object to that.

A.—I don't know, sir. I told—

Mr. Sizer:—Wait a minute, Mr. Granger.

THE COURT:—Objection sustained.

To which ruling of the Court the plaintiffs, etc., excepted.

Mr. Walker: Q.—Mr. Granger, when was it you say that you, yourself—give us as near as you can the date when you drank Wine of Cardui? A.—Why, it has been some four or five years since I drank any of it.

Q.—Now five years ago, or about five years ago you quit drinking any of it? A.—Yes, sir.

Q.—And how long before that was it before you ever drank any? A.—How long before that before I drank any?

Q.—Yes? As I understand you, you said you drank some of it off and on for a year and a half or more? A.—Yes, sir; I drank it on and off for about two years?

Q.—For about two years? A.—Yes.

Q.—Then that began about seven years ago, is that right? A.—Something like that.

Q.—What is the greatest quantity you ever drank at any one time? A.—About a half a bottle.

Q.—And would you drink that during those two years, a half a day, or how frequently? A.—Oh, sometimes I wouldn't drink any. Sometimes I would drink about one in a day, sometimes I wouldn't drink more than that in a week, or sometimes it would be a month. Just whenever I hit it up, or got hold of it, or struck others that drank with me, or may be I would get some myself to drink.

Q.—You say you would take a drink of it about once a week, or about once a month during that two years? A.—Yes, sir; whenever it came convenient that I could get it, or that I struck where it was that I could buy it.

Q.—Was it relatively more frequent for you to get it once a month? A.—Oh, I could get it oftener than that.

Q.—Well, did you get it once a month? A.—Well, I don't know that I noticed making any practice of getting it once a month, but I would get it every time I would come to town, every time it was convenient.

Q.—Did you get it more than once a week? A.—When I would come to town, I would get it.

Q.—Did you buy it for your own consumption when you went to town, or for your wife? A.—I bought it for her before I bought it for drinking myself, but I didn't buy any for her after I got to drinking it myself. What I bought for her was before I found out that and knew I could drink it.

Q.—You bought it for her before you knew that you could drink it? A.—Yes, sir.

Q.—You saw your brother, you say, on one occasion, or more than one, drink a bottle, a whole bottle? A.—Yes, sir; he had been drinking, and I told him it would kill him—

Mr. Walker:—I move to strike that out. I am not asking you about that. I move to strike that out.

THE COURT:—Strike that out.

Mr. Walker:—I asked you if you ever saw your brother drink a bottle more than once. You can answer it yes or no. I didn't ask you anything else. A.—Yes, sir; I seen him drink—I don't know as I ever saw him drink a whole bottle at any one time before, but I seen him drink a whole sight of times.

Q.—I am talking about a whole bottle. A.—I don't know as I ever noticed him but one time.

Q.—All right. Then there was one occasion when you saw him drink a whole bottle at one time? A.—Yes, sir.

Q.—Well, what was the biggest drink you ever saw him take at one time except the time he drank the whole bottle? A.—Well, I reckon that was about as large a drink as I ever saw him drink at one time.

Q.—I say, what was the largest you ever saw him drink at one time except the occasion he drank the whole bottle?

THE COURT:—Mr. Walker means the next biggest one.

The Witness: A.—Why, he drank it like most people drink whiskey, two or three swallows at a time. He drank it and then he swallowed it down and then some more, and drank it down.

Mr. Walker:—Two or three swallows at the time and then drink it down? A.—A third of a bottle or half a bottle.

Q.—Is that the way you drank it, two or three swallows at the time? A.—Yes, about a couple of swallows at the time.

Q.—How long have you known of Wine of Cardui? Over how many years? I mean how long before you ever drank any of it? A.—Oh, I have known of it a good long time. I couldn't tell you exactly.

Q.—Well, give me an idea of how many years before you began to drink it seven years ago that you have known of it? A.—Oh, eight or ten years I said before.

Q.—You knew of its sale at various drug stores to women eight or ten years before you ever tried it, is that right? A.—Which?

Q.—Eight or ten years ago. A.—I wouldn't say positive how long, but a good long time it had been used around there.

THE COURT:—He said eight or ten years ago. I figure that is eight or ten years from this date.

Mr. Walker:—I beg your Honor's pardon.

Q.—As I understand, you took it some seven or eight years ago for the first time? A.—Yes.

Q.—How long before that time did you know of its being used in Alabama? A.—Oh, it had been used for two or three years before that.

Q.—You knew that it had been used for two or three years before you ever drank any of it? A.—Yes, before I ever drank any of it.

Q.—Where did you get the Wine of Cardui that you drank? A.—Why, I got it at different places. Some from B—— C—— at Cottonwood, and from S——, in a little country store.

Q.—Are they general store keepers, or just little stores? A.—General stores about the country, and they sold it there at their store.

TESTIMONY OF MR. FRANK B. SELLERS

Mr. Frank B. Sellers was called as a witness on behalf of the defendants.

DIRECT EXAMINATION BY MR. SIZER

Mr. Frank B. Sellers testified that he lives in Cottonwood, Ala., Houston County, teaches in the public school and works in his father's store in the summer time. The store is a general merchandise store, 5 miles east of Cottonwood. The store used to sell up to three or four years ago among other things Wine of Cardui, something like 6 dozen bottles a month.

The witness was asked:

Q.—Well, now, what do you know—tell the court and jury what you know relative to the use of Wine of Cardui as a beverage, whether you have ever seen people drink it, and if so to what extent?

Mr. Walker:—That is objected to on the same grounds as the other.

THE COURT:—He may answer. He may tell what he has seen. Not what somebody has told him. Not what somebody has told you, but what you have actually observed yourself.

To which ruling of the Court the plaintiffs, etc., excepted.

The Witness: A.—Well, when I was working there and we first began handling of it it was highly recommended for the female sex.

Mr. Walker:—I move that be stricken out.

THE COURT:—That is admitted, isn't it?

Mr. Walker:—I understand that is admitted, but they do not admit it.

THE COURT:—Strike it out.

Mr. Sizer:—Well, it may be stricken out, but we don't object.

Mr. Walker:—We will admit it, but that is not what we are talking about with this witness, your Honor.

Mr. Sizer: Q.—Go on, Mr. Sellers.

THE COURT:—We want to know who you have seen, not giving names, but how many people you have seen drink it? A.—Well, I have seen several different times six in a party come in the store and would buy

a drink. I saw them take it right from the carton, open the bottle and drink.

THE COURT: *Q.*—They opened it right there in the store? *A.*—Yes, sir, and drank a large amount of the liquid from the bottle; I seen them drink as high as three bottles before they left. That is how come we quit handling it, on that account, they got to drinking it—

Mr. Walker:—I move that be stricken out.

THE COURT:—Strike it out.

Mr. Sizer: Q.—How long did you sell it that way, Mr. Sellers? *A.*—Why, not long. After they come to use it as a beverage we quit. We didn't have any protection.

Q.—You got no police protection out there, you say? *A.*—No, sir.

CROSS-EXAMINATION BY MR. WALKER

On cross-examination Mr. Sellers testified that he came to Chicago on Wednesday with Dr. Moody and Mr. Granger and that his expenses are being paid by Dr. Moody, that he worked in his father's store from the age of 12 years on up; that the store discontinued the sale of Wine of Cardui in 1913.

He was asked:

Q.—Now, it is three years ago, that is as I understand you, that the parties — that some people came to your place and bought this Wine of Cardui and drank it, is that right? *A.*—Three years ago when we quit handling it, this summer, this coming summer three years ago.

Q.—Now, before that had you seen parties come there and drink Wine of Cardui? *A.*—Yes, sir, before that.

Q.—Well, when, first? *A.*—Well, something like about a year before that they began.

Q.—Four years ago they began then? *A.*—They got worse and worse, you see, and began drinking more.

Q.—When did the prohibition law go into effect in Alabama? Do you know? *A.*—I couldn't say.

Q.—Did you ever see anybody come and drink Wine of Cardui at your store before the prohibition law went into effect in Alabama? *A.*—Well, I couldn't say for sure.

Q.—Do you recollect of ever having seen it in your life before that law went into effect? *A.*—The Wine of Cardui?

Q.—Yes. *A.*—Yes, sir.

Q.—No, seen anybody drink it? *A.*—Yes, sir.

Q.—Before the prohibition law went into effect? *A.*—Yes, sir.

Q.—When? *A.*—Off and on a good long time before.

Q.—Well, when was the first time you ever saw anybody come to your store and drink Wine of Cardui? When? *A.*—1911.

Q.—1911. That is five years ago? Isn't it? This is 1916. Isn't it? Well, is it five years ago? *A.*—Let me see. I will have to — I recall back about nine, 1909.

Q.—Well, now, that is six or seven years ago — which? *A.*—Well, it would be seven.

Q.—Did you ever see anybody drink Wine of Cardui before that time at your place, or take it? *A.*—I couldn't say for sure.

Q.—Do you say for sure now that you saw anybody drink it in 1909? *A.*—Yes, sir.

Questions were then asked concerning the date of the Prohibition Law in Alabama. The witness was then asked:

Q.—How do you fix it that year? *A.*—Well, because some occasions happened along then. I couldn't say.

Q.—What occasions? What occasion in 1909? Did you see anybody drink Wine of Cardui, speaking of 1909 now?

THE COURT:—Just tell him what impresses it on your mind. You said there was something that made you remember it. Now tell what that was. *A.*—Well, just on some occasions some parties got real drunk there, and we had to call the bailiff of our beat to take charge of them.

Mr. Walker: Q.—Well, what is it that identifies it as 1909? *A.*—Well, I say that was it. They got drunk.

Q.—Did somebody g t drunk in 1910? *A.*—Well, now we didn't have them arrested, but we did in 1909.

Q.—Did some get drunk in 1910? *A.*—I couldn't say so for sure.

Q.—Who was it got drunk in 1909? Let me have the names of them. And tell me where they live, each one. *A.*—Well, one is T—— H——, Gorden Route 1.

Q.—T—— H——. He got drunk in 1909. Did you have him—was he arrested?

(No response.)

Q.—Who is the other one? *A.*—The other party is dead.

Q.—Who was he? What was his name? *A.*—What was his name?

Q.—Yes. *A.*—It was one of his brothers.

Q.—H——'s brother? *A.*—I think they called him Pat—I am not sure of his name, but they called him Pat, I think.

Q.—Pat H——? *A.*—He is dead.

Q.—Anybody else? *A.*—They are the only two.

Q.—Now do you know of those men getting drunk on anything else besides Wine of Cardui? *A.*—I couldn't tell what they had — I don't know whether they had anything else or not, but they bought four bottles and drank it and raised sand before they left — what we generally call it, you see.

Q.—In 1909. Did they buy anything else besides Wine of Cardui on that occasion? *A.*—Nothing, only they bought some—

Q.—Did they buy something else? *A.*—Some canned goods for their dinner, and some cigars.

Q.—And you had them arrested? *A.*—Yes. We didn't, but some parties right near by did. It wasn't us that had them.

Q.—And you fix the date as 1909 by reason of that? *A.*—Yes, I remember it very well.

The witness was asked concerning whom he had seen drinking Wine of Cardui. He was then asked questions concerning the party of six mentioned in the direct examination:

Q.—Mr. Witness, can you name another one of the six in 1913, the six, and tell us where he is living, that is living? You ought — you need not tell us where the dead live. *A.*—No, sir; I could not.

Q.—All right. Now besides that party of six — how many bottles did they get? *A.*—Why, they got I think about six or eight.

Q.—A bottle apiece? *A.*—Yes, six or eight bottles, I say.

Q.—Did they drink it right there on the ground? *A.*—No, they drank three bottles before they left.

Q.—Those six people drank three bottles before they left, and then they took three away with them. *A.*—Oh, about five.

Q.—And you didn't have them arrested? *A.*—No, they was all right.

He was then asked concerning the source of Wine of Cardui sold in the store:

Q.—Where was your father accustomed to get it? *A.*—How did he get it — he bought it from the drummers.

Mr. Sizer:—Talk a little louder, Mr. Sellers.

Mr. Walker:—Bought it from a drummer.

Mr. Walker: Q.—Were you there at any time when he purchased it? *A.*—Yes, sir.

Q.—Do you know the man from whom he bought it, or what his name was? *A.*—I don't believe I can recall his name now.

Q.—For whom was he a drummer? Do you know?

(No response.)

Q.—I didn't hear you. *A.*—Well, I was just thinking of it.

Q.—Oh, pardon me. All right. Well, can't you think of it? *A.*—I don't believe I can.

Mr. Walker: Q.—All right. I guess that is all. Oh, wait a minute. Is your father living? *A.*—Yes, sir.

Q.—What is his name? *A.*—J. H. Sellers.

Q.—He conducts his business under the name of J. H. Sellers? *A.*—Yes, sir.

Q.—And he is still in business at the same place? *A.*—Yes, sir.

Q.—Same store? *A.*—Yes, sir.

Q.—Where you used to work? *A.*—Yes.

Q.—What other medicines does your father carry in stock besides Wine of Cardui? *A.*—Why, he don't handle the Wine of Cardui at all now.

Q.—Well, I mean then when he handled them, what did he carry? *A.*—He had Dr. King's Medicine and he had Grangers' Patent Medicine besides that.

Q.—Anything else? *A.*—No, sir.

Q.—Any other medicines besides Dr. King's and Dr. Grangers'? *A.*—Not that I remember. We carry some of Dr. King's now.

Mr. Walker:—I think that is all.

The Witness:—And also Dr. Thatcher's.

Q.—Dr. Thatcher's? *A.*—Yes, sir.

Q.—I understand you to say Dr. Keene? *A.*—King, K i n g. And Dr. Granger's and Dr. Thatcher's.

TESTIMONY OF JOE H. COOPER

Mr. Joe H. Cooper was called as a witness on behalf of the defendants.

DIRECT EXAMINATION BY MR. SIZER

Mr. Joe H. Cooper testified that he is a barber residing in Oakdale, Tenn.; he is 32 years old. Oakdale is 84 miles from Chattanooga.

Objection was made to questions regarding the introduction of evidence as to whether the witness drank Wine of Cardui, but was overruled and exception taken. Objections were made, overruled and exceptions taken to questions concerning the witness's observation of others who drank Wine of Cardui; the size of Oakdale, etc.

The witness testified that he drank Wine of Cardui as a beverage for three years, as much as a coca-cola glass full at a time. This, questioning showed, was about 5 ounces. He testified that he was not at any time nauseated, but experienced the same effect as that of whiskey.

The witness has drunk during the last three years and a half three or four glasses of beer.

CROSS-EXAMINATION BY MR. WALKER

On cross-examination Mr. Cooper testified that he came to Chicago alone, that he has seen Dr. Heizer in Chicago; that he first met Dr. Heizer about a year ago in Oakdale. He testified that he was introduced to Dr. Heizer by his brother, Dr. John W. Cooper, and that he did not drink any Wine of Cardui for Dr. Heizer.

The witness testified that he has not received any money from Dr. Heizer. He was then asked:

Q.—All right. Now, Mr. Cooper, have you received any money beyond your railroad fare, as yet? *A.*—Yes, sir.

Q.—How much? *A.*—Ten dollars.

Q.—And who paid your railroad fare up here? *A.*—The receipt that I was to sign was to the AMERICAN MEDICAL ASSOCIATION.

Q.—Well, you got a ticket, did you: is that it? *A.*—Yes, sir.

Q.—They sent you tickets to come with? *A.*—No, sir; I bought the ticket.

Q.—And besides that, you have received ten dollars? *A.*—Yes, sir.

Q.—You understand they are paying your expenses here, do you not? *A.*—Certainly.

Q.—And how much a day are you getting, if any? *A.*—I don't know.

Q.—You have no agreed sum? *A.*—No, sir.

Q.—Have you—are you to receive something— *A.*—I am.

Q.—for your time? *A.*—Certainly.

Q.—Without any reference to the amount? *A.*—I do not know what the amount will be.

Q.—Five dollars or ten dollars a day, or something like that? *A.*—I do not know what it will be.

Q.—What are you going to charge?

Mr. Sizer:—I object to that.

Mr. Walker:—Why not?

Mr. Sizer:—There is no agreement, he says.

THE COURT:—Objection sustained.

Mr. Walker:—Well, what is he going to ask? Exception.

To which ruling of the Court the plaintiffs, etc., excepted.

The witness was then asked concerning the prohibition law in Tennessee and as to what he drank previous to the time when he first drank Wine of Cardui. Since the prohibition law went into effect, he drank lemon extract, cherry bitters and gilt edge bitters as well as Wine of Cardui. He has not taken a stronger stimulant than beer since Oct. 20, 1912.

The witness was cross-examined concerning Oakdale and its population and named two men whom he had seen drinking Wine of Cardui.

REDIRECT EXAMINATION BY MR. SIZER

On redirect examination, the witness testified that he could remember no other names of men who drank Wine of Cardui as a beverage than those already mentioned.

TESTIMONY OF JULIUS S. M'GREGOR

Mr. Julius S. McGregor was called as a witness on behalf of the defendants.

DIRECT EXAMINATION BY MR. SIZER

Mr. Julius S. McGregor testified that he is a merchant and a farmer residing in Ruby, S. C.

Objection was again made to the introduction of evidence as to the drinking of Wine of Cardui as a beverage by men.

The witness testified that ten or twelve years ago, he was clerking for his father in a general store and had seen men drink from one-third to one-half bottle of Wine of Cardui at one time. He also said that his father sold about 12 dozen bottles a month. The father has not sold any Wine of Cardui for six or seven years.

He was then asked:

Mr. Sizer:—*Q.*—Did you ever see anyone get intoxicated on Wine of Cardui? *A.*—Yes, sir; I have.

Mr. Walker:—Same objection.

THE COURT:—He may answer.

To which ruling of the Court the plaintiffs, etc., excepted.

The Witness:—I remember one, one specific case, W. A. W——, of my town.

Mr. Walker:—W. A. W——?

The Witness:—W. A. W——.

Mr. Sizer:—Talk louder, please.

The Witness:—Mr. W—— came into the store one afternoon and he bought a bottle of Wine of Cardui; and he went out and in a short time he came back in the space of something like an hour—he came back and bought the second bottle of Wine of Cardui. And I noticed when he came back the second time that he was under the influence of strong drink; and I did not know at that time that he was drinking it as a beverage; but some time after that I got to notice it. He was a man that traded a good deal in the store, and I noticed to see what he was doing with this Wine of Cardui. I suppose it was something like a week, and he came and bought some more bottles, and I saw him in the back lot drinking Wine of Cardui; and after this time I noticed that he was under the influence of strong drink—intoxication.

Q.—That is, after you saw him out there in the back lot drinking it, you noticed he was intoxicated? *A.*—Yes, sir.

Q.—Is that the only instance of that kind that you recall, or do you remember others of the same kind? *A.*—No, sir; I remember other instances; I remember that one afternoon a fellow, S——, Arling S——, who bought some of this, came in the store and bought this Wine of Cardui. Some time after that, I suppose probably it was 30 or 40 minutes, I went out into the back lot to see what he was doing. I knew that he went back in that direction; and I found him with one of his friends, drinking this Wine of Cardui. And I saw them open the bottle and drink of the contents; and the two drank the entire bottle.

CROSS-EXAMINATION BY MR. WALKER

The witness testified on cross-examination repeating the statements told in direct examination as to his occupation and the radius of the country served by the store. He was again asked concerning W. A. W—— mentioned in the direct examination, also concerning Arling S——. He was then asked:

Q.—Now, your father, you say, when he was in business ten or twelve years ago would buy a gross a month? *A.*—Yes, sir.

Q.—From whom? *A.*—Well, I think he bought it from the Chattanooga Medicine Company, though I would not say positively.

Q.—That is your understanding— *A.*—Yes, sir; that is my understanding.

Q.—That he would deal directly— *A.*—Yes, sir.

Q.—With the Chattanooga Medicine Company? *A.*—I think he did; Yes, sir.

Q.—What was your father's name? *A.*—D. H.

Q.—What? *A.*—D. H.

Q.—What does the D. stand for, Donald? *A.*—David.

Q.—David H.? *A.*—Yes, sir.

Q.—McGregor? *A.*—Yes, sir.

Q.—Is your father living? *A.*—Yes, sir.

Q.—When did you get to Chicago, Mr. McGregor? *A.*—I came here a week ago today.

Q.—What? *A.*—A week ago today

Q.—Did anyone come with you? *A.*—Yes, sir.

Q.—Who was in your party? Who were in your party? *A.*—Only one more.

Q.—Who was it? *A.*—Dr. R. M. Newsom.

Q.—Who? *A.*—Robert M. Newsom.

Q.—How do you spell it? *A.*—N-e-w-s-o-m.

Q.—Is he in Chicago now? *A.*—Yes, sir.

Q.—Where does he live? *A.*—He lives at the same town, my home town.

Q.—Did you ever meet Dr. Heizer? *A.*—Yes, sir.

Q.—Outside of Chicago? *A.*—Yes, sir.

Q.—Where? *A.*—I met him in Columbia.

Q.—Well, where is that? *A.*—That is the capital of South Carolina.

Q.—And how far from your city? *A.*—Why, I suppose it is about ninety miles.

Q.—How did you happen to meet him in Columbia? *A.*—Well, I was—I went with the same party that was with me, Dr. R. M. Newsom.

Q.—Dr. R. M. Newsom took you to Columbia to meet Dr. Heizer? *A.*—Well, we went together; yes, sir.

Q.—Did you know at the time you were to meet Dr. Heizer? *A.*—Why, no, sir; I did not; not until after we left the town.

Q.—Newsom asked you to go to Columbia with him? *A.*—No, sir. I expected to go the day before, and I asked Dr. Newsom to go with me, and we agreed to wait over until the second day and go. That was—

Q.—Well, you had other business in Columbia? *A.*—Yes, sir; I did.

Q.—When you got— Newsom knew you were going? *A.*—Yes, sir.

Q.—When you got down there you were introduced to Dr. Heizer by Dr. Newsom? *A.*—No, sir. We — I do not think either one had met Dr. Heizer, but we met him in Columbia at that time.

Q.—Well, where did you meet him? *A.*—We met him at the hotel, Jefferson Hotel.

Q.—Who introduced him to you? *A.*—Why, we introduced ourselves, I think. I think Dr. Newsom introduced me—Yes, sir; I think he did; I am not positive.

Q.—Do you know whether Dr. Newsom had known Dr. Heizer before that time? *A.*—No, sir; I do not know.

Q.—You do not know how their acquaintance came about? *A.*—No, sir.

Q.—Did you have any talk with Dr. Heizer at that time about coming to Chicago? *A.*—Yes, sir.

Q.—Who introduced that subject, Dr. Newsom or Dr. Heizer? *A.*—Why, Dr. Newsom, I believe, asked me if I knew anything in regard to it.

Q.—Yes. Did Dr. Heizer give you any money? *A.*—No, sir.

Q.—Who paid your fare to Chicago? *A.*—Why, I paid it myself.

Q.—And have you received any money from any one while—since you have been here? *A.*—Yes, sir.

Q.—From whom? *A.*—From Dr. Heizer.

Q.—How much? *A.*—$25.

Q.—What is your railroad fare? *A.*—Why, I don't know; I think it probably is $50 or $60.

Q.—And you have not received that back yet? *A.*—No, sir.

Q.—Do you expect to get it back? *A.*—Yes, sir; I do.

Q.—And your return fare? *A.*—Yes, sir.

Q.—And how much for your time? *A.*—Why, I do not know. There was not anything said in regard to that.

Q.—How much do you expect to ask?

Mr. Sizer:—I object to that, his expectation—

THE COURT:—Well, the amount cuts no figure. A witness may testify whether or not he expects to be paid, and let it go at that.

Mr. Walker:—Well, I will ask that:

Q.—You expect to be paid for your loss of time, I take it? *A.*—Yes, sir; I do.

The witness was then cross-examined concerning the purchase and sale of Wine of Cardui in his father's store, quantity, shipments, etc. He also named other stores in Ruby, S. C.

REDIRECT EXAMINATION BY MR. SIZER

On redirect examination, the witness was asked whether the other stores doing business in Ruby carried Wine of Cardui.

Objection was made and sustained and exception taken by the defendants.

The court then adjourned until Tuesday, April 4, 1916.

April 4, 1916, Morning

TESTIMONY OF DR. ROBERT H. NEWSOM

The court met pursuant to adjournment. Dr. Robert M. Newsom was called as a witness for the defendants.

DIRECT EXAMINATION BY MR. SIZER

Dr. Robert M. Newsom testified that he has been a practicing physician in Ruby, S. C., for five years. He stated that 75 per cent. of the poor people in his community use Wine of Cardui, and that it is bought and used by both men and women.

Objection was made to the introduction of further evidence of this character. Mr. Sizer finally stating:

"We want to show as a matter of fact, that it is used extensively by men and women as a booze and tipple all over the South, and we have witnesses here from a number of the Southern States."

The court ruled that the evidence might be introduced and the plaintiffs excepted.

Mr. Sizer asked:

Q.—Now, doctor, will you state some concrete cases that have come under your observation, and in your practice with respect to the use of Wine of Cardui by women? *A.*—Well—

THE COURT:—Give the names and dates if you can. *A.*—All right. I wil, as near as I can. Mrs. A. T. K——, I saw her a year ago at Ruby, South Carolina. She came under my practice suffering—

Mr. Sizer:—What is the name? *A.*—A. T. K——. She came under my personal observation. She came in to see me. She was very anemic and was run down and poorly nourished and everything, and I quizzed her and asked her history about it and she gave me a history of taking Wine of Cardui.

Objection was made to the introduction of any testimony of what the patient told the physician. He was asked:

Q.—Can you recall any other case? *A.*—Miss Nancy J—— of Jefferson I can state also was a woman that was suffering with a whole lot of female troubles, prolapsus, ovarian cyst and retroversion. She was very much emaciated. I revealed that by physical examination, and this woman had been taking Wine of Cardui.

Mr. Walker:—I object to that unless he saw her take it.

A.—I saw her take it. She came under my observation and had been taking Wine of Cardui for eight or ten years.

Mr. Walker:—I object to that.

Mr. Sizer: Q.—How long did you personally know—

Mr. Walker:—I move to strike that out.

THE COURT:—Strike it out.

To which ruling of the court the defendants, etc., excepted.

The Witness:—I know she took it six months.

Mr. Walker: Q.—That is, you yourself saw her take it over a period of six months. *A.*—I did not see her take it every day.

Mr. Walker:—I move to strike that out then.

Mr. Sizer:—He says he did not see her take it every day.

Q.—How often did you see her take it during that period of time? *A.*—I saw her take it, I saw her take a dozen bottles.

Q.—How much did she take at a dose? *A.*—It got to where she would take—she would take the regular dose when she started and I saw her take about one third of a bottle. She first began to take Wine of Cardui and when she—she had been taking from the first, Wine of Cardui but it lost its strength and when the Harrison Narcotic Law came in and she could not get morphin—she had been taking morphin before.

Q.—Did you give her morphin? *A.*—I did not.

Mr. Walker:—Then I object to it. He is stating what she told him, or what she did all that time.

The Witness:—I gave it to her during the period she was taking it, but when the Harrison Narcotic Law came in, I did not.

Mr. Sizer: Q.—Do you know as a matter of fact, whether she had been taking morphin? *A.*—I know she took it.

Q.—You know she took it? *A.*—Yes, sir.

Q.—And when the Harrison Law went into effect, she could not get the morphin? *A.*—She could not get the morphin, and she resumed Wine of Cardui in large doses.

Mr. Walker:—I move that that statement be stricken out.

Mr. Sizer: Q.—Well, do you know that after that time she took Wine of Cardui? *A.*—Yes, sir; I know that after that time she took Wine of Cardui.

Q.—And took it you say, according to your knowledge over a period of six months. *A.*—Six months.

Q.—What was the largest amount you ever saw her take?

Mr. Walker:—He named that, he said one third of a bottle. *A.*—I saw her take about one third of a bottle.

Q.—Two thirds?

Mr. Walker:—No, one third of a bottle he said.

Mr. Sizer: Q.—Did she pour it out in a tablespoonful dose or drink it out of the bottle? *A.*—Drank it out of the bottle.

Q.—Now, Doctor, is there any other case? *A.*—The little G—— girl.

Q.—What was her name? *A.*—Miss—let's see.

Q.—Well, her name was G——, was it? *A.*—Jennie G——.

Q.—Did she live there at Ruby? *A.*—She gets her mail off the Pagland Route. I treated her—she came under my observation suffering—run down from anemia and I examined her and found she was suffering with hookworm.

Q.—Suffering with what? *A.*—Hookworm.

Q.—Speak louder, doctor, and try to speak more distinctly. *A.*—I discovered that by microscopic examination.

Q.—You discovered that she was suffering with hookworm? *A.*—I discovered that she was suffering with hookworm and I saw her take Wine of Cardui.

Q.—You saw her take it? *A.*—I saw her take it.

Q.—How much did she take? *A.*—Well, she would take—she took it pretty regularly by dose. I was going there treating a case of fever at the time and I saw her take it.

THE COURT: *Q.*—About how old was she? *A.*—She is 17 years old.

Mr. Sizer: Q.—Now, Doctor, won't you speak as distinctly as you can. *A.*—She was taking Wine of Cardui for suppressed menstruation or amenorrhea, it never had come on.

Q.—That is, you mean—

Mr. Walker:—I move that that be stricken out.

THE COURT:—Strike it out.

To which ruling of the court the defendants, etc., excepted.

Mr. Sizer: Q.—You mean she never had menstruated?

Mr. Walker:—Wait a moment, the court struck that out.

Mr. Sizer: Q.—Do you know, could you tell from the examination you made of her? *A.*—No, she never had menstruated.

Mr. Walker:—I move to strike that out.

Mr. Sizer: Q.—Could you tell that from your own examination of her, or as a part of her history of the case. *A.*—It was her history of the case.

Mr. Walker:—I move to strike that out.

THE COURT:—Strike it out.

To which ruling of the Court the defendants, etc., excepted.

WHAT A PHYSICIAN MAY STATE

Mr. Sizer:—If your Honor please, I believe that a physician is entitled to state what a patient tells him regarding her symptoms as a part of the clinical history of the case. If a patient goes to a doctor for treatment, he has got to know what her condition is, and what symptoms she has been manifesting, and I think the rule is that it is competent for a physician to state what the patient has told him under those circumstances, as the clinical history of the case.

THE COURT:—I think that is the rule in Illinois, Mr. Walker, unless there is a different rule in the Federal Court.

Mr. Walker:—I think under some circumstances, the rule is right, but I do not think this sort of evidence comes within the rule, myself. A doctor, who has been treating a patient may tell both the objective and subjective symptoms if he is not treating her for the purpose of giving testimony, but that does not apply here.

THE COURT:—Well, find out whether at the time this treatment is given, the doctor knew anything about this case, or whether it was pending or not.

Mr. Sizer:—Yes, sir. Well, doctor, just now state what you discovered or what examination you made and what symptoms you discovered when you first went to examine this case. *A.*—When I first saw this little girl I found she was very anemic.

THE COURT:—When was that? *A.*—That was six months ago, as near as I can remember.

Q.—Did you know anything about the pendency of this suit at that time. *A.*—I did not. I will say—I wish to withdraw that statement—it might have been eight months ago, but it was before I ever heard of a Wine of Cardui case.

Q.—You had not been asked whether you would testify in this case at that time? *A.*—No, sir; it was before that.

Mr. Sizer: Q.—Now then, did you ask her what symptoms she had been manifesting or what was the nature of her illness prior to the time of your examination, what she had been suffering with? *A.*—Yes, sir; I asked her that.

Q.—What did she tell you with regard to her symptoms when you asked her the history of her case? *A.*—Well, she told me that her menstruation was suppressed.

Q.—Speak out loud. A.—The menstruation was suppressed and it never had come on and she was anemic and all, and I told her that I thought she was suffering with amenorrhea.

Q.—Did she tell you she had been taking anything for the suppressed menstruation? A.—Yes, sir.

Q.—What did she tell you she had been taking? A.—Wine of Cardui.

Q.—Talk out loud, doctor? A.—Wine of Cardui.

Q.—Did you or not say that you had seen her take it while you were treating her? A.—Yes, sir.

Q.—What sized doses did she take? A.—She took—this little G—— girl?

Q.—Yes. A.—She took it about by dose and when I saw her take it she took some out of the bottle.

Q.—Out of the bottle? A.—And I would say it was one third of a bottle.

Q.—What was her age did you say? A.—She was 17 years old.

Q.—Did you treat her? A.—Yes, sir.

Q.—Did she get well under your treatment? A.—Yes, sir. I stopped her from taking Wine of Cardui, and I gave her hookworm treatment, and she got well.

Dr. Newsom then testified that a Mrs. —— came to him. He found that she was suffering with a pretty well advanced case of pulmonary tuberculosis and she was under the impression that she had female trouble and had been taking Wine of Cardui for two years. The patient died.

A Miss Louise H—— at Wadesboro, N. C., aged 28, suffering from menorrhagia caused from a result of retroversion, had been taking Wine of Cardui for two years and was getting worse every day.

A Mrs. W. J. M——, Patrick, S. C., aged 28, was suffering with malarial fever and had amenorrhea. She had been suffering for about three years and had been taking Wine of Cardui, but it did not do her any good.

The witness was then asked:

Q.—Now, do you know of any, or can you state any instances of people drinking Wine of Cardui as a beverage? A.—Yes, sir.

Q.—Well, go ahead and state some such instances. A.—Well, a Mr. W. A. W——.

Q.—Does he live there in your community? A.—Yes, sir.

Q.—Well, state what you know about his taking it? A.—Mr. W—— has come in the drug store in my own knowledge as many as twenty-five times, I would say twenty to twenty-five times—I would not like to exaggerate, but I know that many times, I have seen him buy Wine of Cardui off the shelf and drink it, and drink it and pour it out in a coca cola bottle and drink it with coca cola. I have seen him drink half a bottle at a time, and that is pretty regular, it is going on right now.

Q.—What effect would it have on him? A.—He would get drunk on it.

Q.—Get drunk? A.—Yes, sir.

Q.—You have seen that you say twenty to twenty-five times? A.—Yes, sir.

Q.—Anybody else? A.—Loony W——, his son.

Q.—That is one of these other men? A.—Yes, sir.

Q.—Well, what about him? A.—I have seen him drink it I will say five times.

Q.—Talk as distinctly as you can. A.—I have seen him drink it five times.

Q.—How much would he drink? A.—I have seen him drink half a bottle.

Q.—What effect would it have on him? A.—About the same effect that whiskey does if you get enough of it.

Q.—Would he get intoxicated or not? A.—Yes, I have seen Lonny intoxicated.

Q.—Well, any others? A.—And a fellow named Cort C——.

Q.—What business is he engaged in? A.—Farmer; all of them are farmers.

Q.—All of them are farmers. What do you say about Mr. C——. A.—Well, Mr. C——, I have seen him come in there and take Wine of Cardui, I will say ten times. I have seen him open it and get drunk on it before he left town.

Q.—I want to ask you, have you an interest in the drug store there, or is your office in the drug store? A.—I have had an interest in one, and my office is in the drug store too now.

Q.—At the time you observed these men, were you in the drug store, interested in the drug store? A.—I got an office in the back end of the drug store.

THE COURT: Q.—Was that the drug store that you were interested in? A.—I was not interested in it, I have not been interested in it for about a year.

Q.—At that time you had no interest in the sale of the drugs? A.—No, sir. I have sold several other patent medicines—

Mr. Walker:—I move to strike that out.

THE COURT:—Strike it out.

To which ruling of the court the defendants, etc., excepted.

Mr. Sizer: Q.—Any other cases, doctor, under that same head? A.—Under that same head, C——, — I treated him. He had a runaway. He drank Wine of Cardui and his horse ran away and throwed him out of the buggy and cut off his right ear. He lost his right ear and had a concussion and he is paralyzed on his right side now. He is under my treatment right now. He cannot use his arm or his leg or anything.

Q.—That was a runaway accident following the use of Wine of Cardui, you say? A.—Yes, sir.

Q.—Very well. Now is there any other case that you can tell about? A.—W. L. G——, of Greensboro.

Q.—Greensboro? A.—He is a traveling man.

Q.—South Carolina? A.—A traveling man—North Carolina.

Q.—Is that Greensboro, South Carolina? A.—North Carolina.

Q.—What did you see Mr. G—— do? A.—I saw him come in there one day—a traveling man and I did not know what in the world he was buying Wine of Cardui for, but I saw him buy two bottles, and I saw him go out of the store and drink one. He came back in and made the statement, "That is the best drink I ever drank."

Mr. Walker:—I move to strike that out.

THE COURT:—Strike it out.

To which ruling of the court the defendants, etc., excepted.

Mr. Sizer:—Never mind what he said, just what he did.

Q.—Now, Doctor, how many stores are there in Ruby at which Wine of Cardui is sold, if you know? A.—I declare I could not say.

Q.—Several of them?

Mr. Walker:—That is objected to.

Mr. Sizer: Q.—Well, more than one? A.—It is sold at the drug store.

Q.—Do you know whether it is sold at the other stores than the drug store? A.—I think—I am not sure, but I think Steen & Company sells it.

CROSS-EXAMINATION BY MR. WALKER

On cross-examination Dr. Newsom testified that he has known Dr. Heizer since last November, 1915. He met him in Columbia at the Jefferson Hotel, with Mr. McGregor.

The witness testified that he is a member of the AMERICAN MEDICAL ASSOCIATION and of a county medical society reorganized since Dr. Heizer's visit. He was asked numerous questions concerning Miss Nancy J——, as to her various symptoms and his treatment of her.

He was then asked numerous questions concerning the G—— girl, repeating the testimony previously given. He was asked:

Q.—What did you do, what did you give her? A.—I gave her the hookworm treatment.

Q.—And what stuff is that. A.—Thymol.

Q.—Anything else? A.—I gave her a tonic.

Q.—What kind? A.—Iron, arsenic and strychnin.

Q.—How, in capsules? A.—No, I put it in a liquid.

Q.—How much alcohol was in it? A.—I am not sure.

Q.—Was it by prescription? A.—It was by prescription, yes.

Q.—Was it a compound that was poured out of a bottle into another, or was it a concoction that the druggist made up from your prescription? A.—Part of it was.

Q.—Part of it was what? A.—I added part of it to it—wrote a prescription.

Q.—What did you add to the stuff? A.—Arsenic.

Q.—You added arsenic? A.—Yes, sir.

Q.—And what was the stuff? A.—Iron. It is elixir of iron, quinin and strychnin.

Q.—Elixir of iron, quinin and strychnin? A.—Yes, sir.

Q.—Who makes it? A.—I don't know.

Q.—Parke-Davis & Company? A.—Eli Lilly I think.

Q.—Do you know how much alcohol there is in that mixture? A.—I declare I would not be sure about it.

Q.—You added some arsenic to it? A.—Yes, sir.

Q.—And you had it made out of that elixir? A.—The druggist added the arsenic to it.

Q.—Now, do you make up your own prescriptions at times, mix your own compounds? A.—No, I never did.

Q.—How many times a day did she take this iron stuff, this girl? A.—Three times.

Q.—How? A.—By mouth, a teaspoonful, three times a day.

Q.—Was there 50 per cent. alcohol in that iron combination, that Lilly makes, iron and something else? A.—Tincture of iron, quinin and strychnin. I don't think so, but I am not sure; I would not be certain about it.

Q.—Would you be certain that there was not 65 per cent. in it? A.—I am not sure.

Q.—As to the alcohol in the medicine that you give as a doctor, do you say that that is negligible, or would that make a booze fighter out of Jennie G——? A.—I don't think it would; if she takes strychnin I don't think—

Q.—How many times have you seen Jennie G—— drink Wine of Cardui? A.—I have seen her—

Q.—Yes, seen her. Did you ever see her? A.—I have seen her four or five times.

Q.—You have seen her four or five times where? A.—At her home.

Q.—The first time you went to see her, did she drink some Wine of Cardui? A.—Yes, sir.

Q.—Did you ask her to? A.—No, I did not.

Q.—That was two months before you met Heizer? A.—Yes, probably a month or two before I met Heizer.

Q.—You did not ask her to drink this Wine of Cardui? A.—I did not, no.

Q.—How much did she drink of it? A.—She took I would say somewhere between a quarter and a third of a bottle.

Q.—Drank it out of the bottle? A.—Yes, sir.

Q.—Did she drink any more while you were there? *A.*—No.

Q.—When did you next see her drink any? *A.*—I saw her about two weeks after that.

Q.—Two weeks after that. Where did you see her, at her house or at your office? *A.*—Her house.

Q.—How much did she drink then? *A.*—She took about a tablespoonful.

Q.—Where did you next see her drink any? *A.*—I saw her every day for about three days after that. I went there to see her father.

Q.—For about three days. How much did you see her drink the next time that you ever saw her drink any more? *A.*—I never saw her drink any more.

Q.—Now she knew, didn't she—you told her when you first saw her that she had the hookworm? *A.*—I told her I thought she had; I would have her feces examined.

Q.—She knew that your medicine that you gave her was for hookworm? *A.*—Yes.

Q.—And that the tonic was to build her up? *A.*—Yes.

Q.—And did she tell you that she was taking Wine of Cardui because she had amenorrhea? *A.*—Yes.

Q.—To bring her periods around? *A.*—Yes.

Q.—You say she had never had them? *A.*—No, never had no periods.

Q.—Had she ever come around? *A.*—Yes, she has come around now, but she quit taking Wine of Cardui the last time I was there.

Mr. Walker:—I move to strike that out. I asked you if she had come around. *A.*—Yes, she came around.

Q.—Do you think the iron and alcohol—what is the other stuff in that, iron and alcohol and what else is there in your dope? *A.*—I think the hookworm treatment brought her around.

Q.—What else was there in that stuff, iron and alcohol? *A.*—I did not say there was any alcohol in it. You might, but I might not.

Q.—The stuff that Lilly makes. What else was there in there, besides the iron, what else? *A.*—Iron, quinin and strychnin.

Q.—What else? *A.*—I put arsenic in it.

Q.—Do you think the curing of the hookworm brought her around? *A.*—I think it did.

Q.—Or do you think the iron, strychnin and the other thing did? *A.*—I think the hookworm treatment brought her around.

Q.—You don't think the tonic helped her any? *A.*—I think it did.

Q.—The iron and so forth? *A.*—Yes.

Q.—Had you been acquainted with Dr. Heizer before you saw him in November? Had you been corresponding with him before then? *A.*—I saw him in November. No, I got a letter from Haines.

Q.—Who? *A.*—Haines.

Q.—Who is Haines? *A.*—He is secretary of the Bureau of Statistics of South Carolina.

Q.—When did you get that letter? *A.*—I got it about—I guess something like about seven or eight months ago, about seven months ago.

Q.—It was about the time you began to treat Nancy J—— and the G—— girl, wasn't it? *A.*—No, I saw Miss J—— a year ago.

Q.—But the G—— girl, you began treating her when you got the letter from Haines? *A.*—I don't think I ever got any letter from him when I saw her. I would not swear whether I had or had not. I did not pay any attention to it. He did not say anything much about—

Q.—Did you get any other communication from any other member of the MEDICAL ASSOCIATION? *A.*—Yes, sir, I got a letter from Dr. Heizer.

Q.—When? I mean before you saw him? *A.*—I got a letter I guess about two or three weeks before I saw him.

Q.—Were you treating the G—— girl then? *A.*—When I got the letter from him?

Q.—Did Heizer tell you— *A.*—Wait a minute. You ask two or three questions all at the same time.

Q.—I thought you had finished.

Mr. Loesch:—He has tumbled to it at last.

Mr. Walker:—What is it?

Mr. Loesch:—I remarked that you always ask the question and take the answer out of the witness's mouth. I cannot tell which is answer and which is question, your Honor back here.

Mr. Walker:—Well, that is not very important.

Mr. Loesch:—I think it is mighty important.

Mr. Walker:—I should not do it, I admit.

THE COURT:—If the Jury is in the same frame of mind, the evidence is not going to do you any harm.

Mr. Walker:—No, if they don't understand it.

Q.—Did Dr. Heizer tell you what he wanted of you in connection with this suit. *A.*—No, he did not.

Q.—Or Haines? *A.*—He did when I saw him in Columbia.

Q.—When you got the letter from Haines, did you understand from that, that there was a case— *A.*—No.

Q.—Against the AMERICAN MEDICAL ASSOCIATION? *A.*—No, I did not understand definitely that there was any case at all about it.

Q.—Did you understand that there was such a suit going on? *A.*—No, I did not.

Q.—Do you take the JOURNAL of the AMERICAN MEDICAL ASSOCIATION? *A.*—I have been taking it right lately since—

Questions were then asked concerning the symptoms of the G—— girl and of Mrs. M——. The witness was also cross-examined concerning Miss Louise H——, Mrs. W. J. M—— and Mr. W——. He was asked:

Mr. Walker: *Q.*—Now, Mr. W—— —when last did you see W. A. W—— drink any Wine of Cardui? *A.*—Well, the last time I saw him has been about, I would say, three months ago.

Q.—Were you then interested in the drug store? *A.*—Yes.

Q.—The first time you saw him then—when was that? *A.*—It has been about two years ago.

Q.—And the last time about three months ago? *A.*—Yes.

Q.—During that period you say you have seen him take Wine of Cardui 20 or 25 times? *A.*—Yes, sir.

Q.—Where was the first time that you ever saw him drink Wine of Cardui? *A.*—The first time I saw him drinking it was between the buildings, between two stores about two years ago; two wooden buildings.

Q.—Where did he get it? *A.*—I don't know where he got it.

Q.—Were you then officing in the drug store? *A.*—Yes, I have been in the drug store all the time, ever since I have been in Ruby.

Q.—How do you know he was drinking Cardui? *A.*—I saw it.

Q.—That is, you saw the bottle? *A.*—I was as close to him as to that place. (Indicating about five feet).

Q.—You saw the bottle? *A.*—Yes, sir.

Q.—And saw the carton? *A.*—Yes, sir, saw it all.

Q.—Now, had he been in the drug store where your office is, just before that? *A.*—No, he had not.

Q.—When was the next time you saw him drink Cardui? *A.*—Well, I could not say exactly the date.

Q.—As near as you can? *A.*—Well, I would say he drank it off and on about every—

Q.—The next time I am asking you about? *A.*—About three months ago he was in the drug store drinking it, three months ago.

Q.—That is the last time? *A.*—Yes, sir, that is the last time I saw him.

Further questions were asked concerning W——'s method of using Wine of Cardui:

Q.—Tell the jury how he would take it; come in and buy a bottle and open it in the drug store? *A.*—Come in and buy a bottle in the drug store and sometimes he drinks it, passes it around to some of them in there. I didn't never pay any attention to it, I just noticed it, this taking by the men of Wine of Cardui that way—

Q.—I am not asking you that? *A.*—Sometimes he poured it in a coca cola bottle and would take it with coca cola.

Q.—And do that publicly? *A.*—Yes, sir, do that publicly.

Q.—Right there in the drug store? *A.*—Yes, sir.

Q.—And drink it in coca cola, as a beverage? *A.*—As a beverage.

Q.—From the first time you saw him between the two buildings—*A.*—Yes.

Q.—He was drinking it that way? *A.*—Yes.

Q.—He was not sick? *A.*—He drank it out of the bottle the first time I ever saw him.

Q.—Was he sick as far as you know? *A.*—No, he was not sick.

Q.—Was there anything the matter with his health? *A.*—Nothing that I know of.

Q.—How many times—I think you said 20 times? *A.*—Ask it all over again, if you want to.

Q.—You have seen him come in and buy it and drink it in front of you, and you knew that he was drinking it as a beverage in that drug store?

Mr. Sizer:—I protest against this. He does not give the witness a chance to answer.

THE COURT:—If you don't let the witness answer the questions, we will never get through. He gets about two words of an answer, and then you ask him another question.

Mr. Walker:—Is there any question pending now, or shall I go on.

THE COURT:—Go right ahead.

Mr. Walker: *Q.*—How many times have you seen this man W—— —*A.*—I have seen him 20 times.

Q.—Drink it as a beverage? *A.*—I have seen him drink it 20 times I think as a beverage.

Q.—Openly? *A.*—Yes sir.

Q.—So the druggist knew it? *A.*—Yes, sir, the druggist knew it, I guess he does.

Q.—You knew it? *A.*—Yes, I knew it.

Q.—You knew he was drinking it as a beverage? *A.*—I thought he was. I did not see any other reason why he was drinking it only as a beverage.

Q.—And that is the three months when he drank it that you were interested in that same drug store? *A.*—Yes, sir.

Q.—Is that right? *A.*—Yes. No, I am not interested in the drug store—I was not three months ago. That is a mistake, I did not say that.

Q.—When did you become interested in it? *A.*—I said that I had sold out the drug store about a year ago.

Q.—You sold out the drug store? *A.*—Just about a year ago.

Q.—Then you were interested in it two years ago? *A.*—Yes, sir.

Q.—When he used to come in and drink it as a beverage? *A.*—He would come in and drink it off and on.

Q.—When you were interested in the drug store? *A.*—Yes, I think I had some in it then.

Q.—What is the name of the druggist in whose store this man drank? *A.*—R. D. M——.

Q.—R. D. M——? *A.*—Yes, sir.

Q.—Is he there now? *A.*—Yes, he is there now.

Q.—Running the drug store? *A.*—Yes, sir.

Q.—Now Lonny W——, is that the son of W. A.? *A.*—Yes.

Q.—Have you seen him come in the drug store? *A.*—Yes.

Q.—And buy Wine of Cardui? *A.*—Yes.

Q.—And drink it as a beverage? *A.*—Yes.

Q.—How many times? *A.*—About four or five times.

Q.—When last? *A.*—The last time I saw him was about four months ago.

Q.—When first? *A.*—It is about six months ago.

Q.—You saw him do that four or five times? *A.*—No, let's see. It has been a year since I first saw him drinking it, the first time.

Q.—Then you were interested in the drug store? *A.*—I was not interested in it at that time. A little over a year ago I sold out.

Q.—Did he drink it in coca cola? *A.*—No, not every time. I think he did once or twice.

Q.—Have you bought back an interest in the drug store since then? *A.*—No.

Q.—You have not any interest in it now? *A.*—Not a bit more than you have, and I reckon you haven't got any.

Q.—Does Lonny W—— live there now? *A.*—He lives at Ruby, three miles from Ruby.

Q.—Was C—— interested in the drug store with you? *A.*—Who?

Q.—M——? Is that his name? *A.*—Yes, he owns the drug store.

Q.—Was he interested in the drug store with you when it (Wine of Cardui) was sold as a beverage? *A.*—He has been interested in the drug store about two years.

Q.—Was he interested with you at any time when it was sold as a beverage? *A.*—He was interested in there when it was sold, yes.

Q.—With you? *A.*—Yes, he was interested in there with me. He had some interest there with me, some.

Q.—Who else had an interest beside yourself and M——, or whatever his name is, anybody else? *A.*—No, that is all.

The witness was then asked concerning Cort C—— and W. L. G——. He was asked concerning his acquaintance with Dr. Haines, statistician. He was asked to identify several letters which were introduced as Plaintiff's Exhibits. The first he identified as similar to a letter he had received from Dr. Heizer as well as the second. Continuing:

Mr. Walker: *Q.*—From whom, Doctor, were you in the habit of buying your Wine of Cardui, when you were in the drug business? *A.*—I never bought any.

Q.—Well, your partner, then, or your associates, where did they get it. *A.*—I don't know. I suppose they got it from the Chattanooga Medicine Company or some local dealer; I could not say for sure.

Q.—You don't know anything about it yourself? *A.*—No, I could not state positively whether they got it from a local dealer or whether they got it from the Chattanooga Medicine Company.

Q.—Now, when you were in the drug business or associated with that business a year ago, and these men were drinking Wine of Cardui as a beverage, and you knew it, did you make any written complaint or any complaint to the Federal Revenue Department of the Government? *A.*—I made complaint enough to ask the men out of there.

Q.—I did not ask you that, I move that be stricken out. I ask you if you made any complaint or sent in any information in regard to the fact that people were drinking Wine of Cardui at your drug store, as a booze, to the Revenue Department of the United States Government. That is what I asked you, did or did you not? *A.*—If you call a policeman when a man is drunk—

Q.—I am not talking about any policeman, or anyone else to take a drunken man out of your drug store. I am asking you whether you, as a doctor, seeing people buy patent medicine in your drug store, made any complaint to the Federal authorities, the Revenue Department, that anybody was drinking Wine of Cardui as a beverage, did you or did you not? *A.*—I did not, because—

Q.—I did not ask you why. I just asked you if you did.

Mr. Sizer:—I submit that that is entirely irrelevant and immaterial.

THE COURT:—I know of no law which requires a complaint to be made. It may be that they ought to have made a report as to the selling of liquor at retail without a license, but as to complaints—

The Witness:—We have got a Federal License, though.

Mr. Sizer:—I move to strike out that question and answer.

The Witness:—(Continuing): Or the drug store has.

Mr. Walker:—Did you make any report to anybody—not to the police now, but to any department of the Government, any kind of a report that people were drinking Wine of Cardui at your drug store, as a beverage.

THE COURT:—You may answer that "yes" or "no." *A.*—I made a statement, but I never have to a Government man.

Mr. Walker:—I move that "I made a statement" be stricken out.

THE COURT:—Strike it out.

To which ruling of the court the defendants, etc., excepted.

The witness was asked as to his remuneration for going to the trial, and as to whether he wrote replies to the letter of Dr. Heizer.

REDIRECT EXAMINATION BY MR. SIZER

Q.—Doctor, you testified with respect to one of these patients, I think Miss J——, that she was suffering with retroversion, prolapse, ovarian cyst, as well as hookworm? *A.*—Yes, sir.

Q.—And that you only treated her for the hookworm? *A.*—Yes, sir.

Q.—Why didn't you treat her for the other things?

Mr. Walker:—That is objected to.

Mr. Sizer:—That is a matter brought out on cross-examination.

THE COURT:—He may answer.

Mr. Walker:—He testified to the case on direct examination.

THE COURT:—Let us find out about it.

To which ruling of the Court the plaintiffs, etc., excepted.

A.—I advised an operation for the other cases, the other troubles. I know I cannot cure a prolapsed womb with medicine. I cannot cure retroversion with medicine, I cannot—

Mr. Sizer: *Q.*—You say you did advise an operation? *A.*—Yes, sir.

Q.—Did she submit to the operation? *A.*—She has not, but she says she will in a few days.

Q.—You did treat the hookworm, the only one of these complaints that you could treat with medicine? *A.*—Yes, and I got results.

Mr. Walker:—That is objected to, the argument in that question.

THE COURT:—Yes, objection sustained.

To which ruling of the court the defendants, etc., excepted.

Mr. Sizer: *Q.*—This tonic that you said you gave to one of these patients, the iron and quinin and strychnin was that a pharmacopeial preparation kept at the drug store? *A.*—Yes, sir.

Q.—And you added arsenic to it, and prescribed it for some of these patients? *A.*—Yes, sir.

Q.—In what dose? *A.*—A teaspoonful, three times a day, after meals.

Q.—Do you remember how many ounces were in the prescription? *A.*—Three ounces. I never prescribe more than three ounces at a time.

TESTIMONY OF MR. RICE STANFILL

Mr. Rice Stanfill was called as a witness on behalf of the defendant.

DIRECT EXAMINATION BY MR. SIZER

Mr. Rice Stanfill testified that he is a merchant at Ragen, Tenn. He has been selling Wine of Cardui for ten years. He has seen two or three people drink Wine of Cardui as a beverage.

Q.—Now, do you remember the names of any of those people that you have seen drink it? *A.*—Yes, sir.

Q.—Well, tell us some of them? *A.*—The first one ever drank it that I noticed for—I call it to get drunk on, was N—— G——.

Q.—Well, did he get drunk on it? *A.*—Well, yes, sir, I would call it that he got drunk.

Q.—How much of it did he drink? *A.*—Well, he drank about half a bottle, stood there a little bit and repeated.

Q.—Drank it right out of the bottle? *A.*—Yes, sir.

Q.—How long ago was that? *A.*—That is somewhere in 1912.

Q.—Now, do you remember anybody else? *A.*—Yes, sir.

Q.—Well, tell us some more names? *A.*—Well, I never sold it to a heap of men. I have sold some to women I think drink it for that.

Q.—Some women drink it, drink it for a beverage?

Mr. Walker:—That is objected to.

THE COURT:—Tell us what you know. Have you seen women drink it in your store? *A.*—No, sir.

Mr. Sizer: *Q.*—Now, Mr. Stanfill, did your wife ever take it? *A.*—Yes, sir.

Q.—When did she commence to take it? *A.*—Something like 15 years ago.

Q.—What sized dose did she take when she began? *A.*—She commenced about a teaspoonful.

Q.—She commenced about a teaspoonful? *A.*—Yes, sir.

Q.—What sized dose does she take now? *A.*—Something like an inch or an inch and a half, a pretty good dram.

Q.—A pretty good dram? *A.*—Yes, sir.

Q.—How often does she take it now? *A.*—Well, most of the time I notice her drink it—I got her to quit about six months ago, or rather she quit, but every morning she most of the time—I will see her drink it.

Q.—Every morning before breakfast? *A.*—Yes, sir.

Q.—How many drinks would she take before breakfast? *A.*—As a general thing I would get up and make a fire and she would come around and reach around to the closet and take her drink and then put on her clothes and go into the kitchen.

Q.—Is that a habitual thing every morning? *A.*—It has been that way for several years.

Q.—You say she quit about six months ago? *A.*—Yes, sir.

Q.—Did she stay quit? *A.*—I think she has. I got Dr. Keeton to talk to her about it.

Q.—He is your family physician, is he? *A.*—Yes, sir.

Q.—How long had she been drinking it in that way now? Ever since she first began 14 or 15 years ago? *A.*—No, she did not drink it that way on the start.

Q.—What did she take it for at the outset? *A.*—Well, she took it for womb trouble.

Q.—What kind of womb trouble, do you know? *A.*—Well, Dr. Keeton called it falling of the womb.

Mr. Walker:—Oh, that is objected to.

Mr. Sizer:—All right.

Q.—Do you know a man named D——? Did you ever see a man named D—— drink Wine of Cardui in your store? *A.*—Yes, sir.

Q.—What is his given name? *A.*—Joe.

Q.—Is he a farmer? *A.*—Yes, sir.

Q.—Out there in your neighborhood? *A.*—Well, yes, you might call it in our neighborhood.

Q.—When was it you saw him drink it? *A.*—Sometime this winter.

Q.—When? *A.*—This winter.

Q.—This winter? *A.*—Yes, sir.

Q.—How much did he drink? *A.*—He come up there one morning to my store and he come in and looked around and wanted something but I told him I did not have a thing.

Q.—You mean he wanted something to drink? *A.*—Yes, sir. He asked me if I didn't and I told him no, I didn't have it. Well he says, "Have you got Wine of Cardui?" And I says, "Yes, I keep that." I says, "You don't want to drink that!" He says, "Yes, I want a bottle of that." Well, he got a bottle and opened it and drank some, about half of it, and stuck it in his pocket and went on.

CROSS-EXAMINATION BY MR. WALKER

The witness was again asked concerning the treating of G—— and D——; besides he had seen a Mrs. R—— drink Wine of Cardui. He was introduced to Dr. Heizer by Dr. W. B. Keeton, his family physician. He came to Chicago with Dr. W. B. Keeton and with a fellow named Crouch and another named Serguson. Continuing:

Q.—Now, Mr. Stanfill, when you first met Dr. Heizer, did he pay you any money? *A.*—When I first met him?

Q.—Yes. *A.*—Yes, sir.

Q.—$10? *A.*—Paid me $2.

Q.—Did you get $10 from him? *A.*—The first time?

Q.—Yes. *A.*—The next day.

Q.—The next day he gave you $10? *A.*—Yes, sir, for my time.

THE COURT:—What was the $2 for? *A.*—For my time, meeting him.

Mr. Walker: *Q.*—The first day he gave you $2 and the next day $10? *A.*—Yes, sir.

Q.—How much time did you give him? *A.*—I could not tell that exactly. We got an automobile—

Q.—Who paid for the automobile? *A.*—I suppose he did. I never asked.

Q.—Was that the first day that you met Heizer or the second day? *A.*—That was the second day.

Q.—Now, where did you go with Heizer the second day? *A.*—We went out to a fellow named R——.

Q.—Did you see Mrs. R——? *A.*—Yes, sir.

Q.—Did she drink any Wine of Cardui at the time you saw her? *A.*—The day—

Q.—When you were there with Heizer? *A.*—Yes, sir.

Q.—Did Heizer get any Wine of Cardui when you went out riding in the automobile with him, did he go anywhere and get it or did you furnish it? *A.*—I furnished it.

Q.—How many bottles did he buy from you? *A.*—One.

Q.—Then you went out and went over to Mrs. R——'s place with Heizer? *A.*—Yes, sir.

Q.—And did he ask her to drink it? *A.*—No.

Q.—Did she drink it? *A.*—Yes, sir.

Q.—He did not open the bottle when he got out there? *A.*—Yes, he asked her if she was a Wine of Cardui user, and she told him yes.

Q.—And he opened the bottle? He opened this bottle? *A.*—I won't say whether he did or she did.

Q.—But she drank it? *A.*—She drank it, yes.

Q.—Did she drink it out of a spoon? *A.*—At first.

Q.—Did she drink more than once? *A.*—Yes, sir.

Q.—At his request, at Heizer's request? *A.*—No, she just showed him how, as she called it, when she was suffering, how she took it.

Q.—When she was suffering? *A.*—Yes.

Q.—Didn't she tell him that she was in the habit of taking it according to prescription on the bottle, and go to a closet and get a spoon out of which she told him that she had been in the habit of taking it, a tablespoonful—didn't she? *A.*—She told him she first commenced—

Q.—I ask you if she didn't tell him that?

Mr. Sizer:—Let him answer.

THE COURT:—Let us get the whole conversation; what she said. It will save time in the long run.

Mr. Walker:—On my examination, when I ask him for a specific thing, do I have to get the whole conversation?

THE COURT:—No, no, but I want to save time.

Mr. Walker:—I am trying to stop them from injecting something into it, if I can.

Q.—Do you know whether or not she went to a place and got a spoon and said she was in the habit of taking it by the tablespoonful as prescribed on the bottle? *A.*—No, sir, she did not say it that way.

Q.—What did she say about the tablespoon. *A.*—She told him—she went away and got one of these great big spoons. It was not a tablespoon.

Q.—Well, what did she get? A soup ladle, was it? *A.*—Yes, sir.

Q.—She got a soup ladle, did she? *A.*—That is what I would call it.

Q.—And what did she say? *A.*—She says that is the way she would take it.

Q.—Did he pay her any money? *A.*—No, sir.

Q.—Did she say that she had been taking it at the time of the change of life? *A.*—I don't remember what she said about that.

Q.—Was there anything said about the change of life? *A.*—Not that I remember of.

Q.—Where else did you go with Heizer after seeing Mrs. R——? *A.*—We went back home to my store.

Q.—Did you see anybody else with him? *A.*—No, sir.

Q.—Did you see Newt G—— with him? *A.*—No, sir.

Q.—I believe you said your wife was not here? *A.*—No, sir.

Q.—Look at the document I now show you, marked Plaintiff's Exhibit D, and state whether or not you recognize that as your wife's signature? *A.*—Well, sir, I could not tell you whether it is or not.

THE COURT:—What is the answer?

Mr. Walker:—He says he could not tell whether it is or not.

THE COURT:—Well, is the letter in her handwriting? *A.*—No, sir, I don't think it is.

The witness was then asked as to who accompanied him to Chicago and as to payment for his expenses. He purchased Wine of Cardui directly from the Chattanooga Medicine Co., and used about eight dozen a year in his store. He has been carrying it in his store for ten years. Mr. Walker then offered as an exhibit a document and asked the witness to identify the signature, which he did. Mr. Walker read the document:

Mr. Walker:—(Reading): "R. F. Stanfill, dealer in dry goods, notions and groceries. Produce Bought and Sold. Ragen, Tenn., October 5, 1914."

The first part is the letterhead printed on top.

"This is to certify that I have never sold Cardui as a beverage and only know of one case in my eight years of handling where one Newt G——came into my store under the influence of intoxicants and in this condition walked up to my shelf, and seeing Cardui, grabbed a bottle and drank half of it. I did not sell it; he took it; wanted something and this was what first came to hand. I also saw him in little or no time get awful sick from having drank it, vomiting it up. This is true facts references to his and this particular case." Signed "R. F. Stanfill."

Mr. Waldo:—What is the date?

Mr. Walker:—October 5, 1914. Now up till you had seen Dr. Heizer, you had seen no one drink it other than your wife, until you—

THE COURT:—That is what he told us; six months ago. It was the man D—— that got it.

Mr. Walker:—If that is clear, I don't need to repeat it.

The witness was asked if he had seen Dr. Heizer offer money to anybody to drink Wine of Cardui or whether he had called on any other person, which questions were answered in the negative.

REDIRECT EXAMINATION BY MR. SIZER

Q.—Mr. Stanfill, who wrote this paper that has just been read here a while ago, this letter of yours? *A.*—Well, sir, I reckon the Chattanooga Medicine man did.

Q.—Who brought it to you? *A.*—The Chattanooga Medicine man, I reckon he was. I never did hear that read before till now. He asked me to make him a little statement when he first come down there and he wrote it up and I turned around and signed it. I never heard it read till now.

THE COURT: *Q.*—As you have heard it read now, are the facts there stated true? *A.*—I think there is a little bit in there that I did not have anything to do with.

Mr. Sizer: *Q.*—Well it is a fact, is it that up to the 5th of October, 1914, this man Newt G——, was the only one you had seen drink Wine of Cardui? *A.*—Yes, that is a fact.

Q.—And is it true, that after he had drank that half bottle of Wine of Cardui he got sick? *A.*—No, sir; if he did, he went out of my place of business.

Q.—Was he staggering when he went out, did he seem to be intoxicated? *A.*—He went on down to the next store and got down, but—I saw that.

Q.—But you did not see him down? *A.*—No, sir.

Q.—What did this man say to you that came there and wanted you to make a statement about drinking Wine of Cardui? *A.*—He come over there and asked me if I sold Wine of Cardui, and I told him yes. He wanted to know if I sold it as a beverage, and I told him not that I knowed of right at that time. Wanted to know if I ever did, and I told him yes I did. Wanted to know the man's name, and I told him.

Q.—Then he wrote out— *A.*—He has got down there that I said he didn't pay for it.

Q.—Yes. You say you did not read that paper before you signed it? *A.*—I surely didn't.

Q.—Have you seen the man that wrote this paper around Chicago here, since you have been up here? *A.*—I believe I have.

Q.—Do you see him in the court room now? *A.*—Yes, I think he is sitting right over there.

Q.—Is that the gentleman? *A.*—Well, I would not say whether he is the first man come to Ragen or not.

Mr. Walker:—Well, he is the one we claim was there and you can have that for what it is worth.

Mr. Sizer:—Do you think he is the man that wrote that statement?

Mr. Walker:—We claim that he is.

Mr. Sizer:—I am asking the witness now. *A.*—I won't say he is. He is the last man that come to see me.

Mr. T. J. Scofield:—What is the name of the man?

Mr. Walker:—Richter.

Mr. Sizer: *Q.*—Did that man give you his name when he come up there? *A.*—Yes, he told me his name two or three or four times, but I don't remember it yet.

Q.—Mr. Walker asked you about some statement that Miss R——, or Mrs. R—— made relative to having taken Wine of Cardui and you gave part of her statement. I want to get you now to state all

that Mrs. R—— said at the time you and Dr. Heizer went down there and saw her about her taking Wine of Cardui? *A.*—She went up and got one of these here great big old spoons you know, and she said she liked Wine of Cardui, it was good medicine for her and she went and took her dose and after a while, while he questioned her about how long she had been using it and how she used it and she said sometimes she had taken something like one third or a half of a bottle in a half day. She went on and told them that she had quit taking it out of a spoon and had taken it out of the bottle, and she had taken a dose out of the bottle.

Q.—Do you know how it was that your wife happened to commence taking Wine of Cardui? In other words, did she see any literature sent out by the Chattanooga Medicine Company?

Mr. Walker:—That is objected to.

THE COURT:—Objection sustained.

To which ruling of the court the defendants, etc., excepted.

Mr. Sizer: Q.—Well, I will ask the question right away. Do you know how it was that she first began to take Wine of Cardui?

Mr. Walker:—That is objected to.

THE COURT:—He has told us why it was and he mentioned the specific disorder that she had.

Mr. Sizer: Q.—Do you know what first called her attention to it?

Mr. Walker:—That is objected to.

Mr. Sizer: Q.—How she became acquainted with it.

THE COURT:—It seems to me you have the wrong witness to prove that.

To which ruling of the court the defendants, etc., excepted.

RECROSS-EXAMINATION BY MR. WALKER

Q.—Was G—— under the influence of liquor when he came to your store and got that Wine of Cardui? *A.*—I don't think he was.

Q.—You think he was sober when he came in? *A.*—I think he was.

Q.—Was he drunk when he went out, on a half a bottle? *A.*—He drank the other half of it, over half.

Q.—Did he drink a whole bottle? *A.*—No, he didn't drink it all.

Q.—Was he drunk when he went out. *A.*—He seemed to be getting drunk, yes.

Q.—Newt G—— is a drinker, and has been over a long period of years, hasn't he? *A.*—Yes, sir.

Q.—What else have you seen him drink besides Wine of Cardui? *A.*—I have seen him drink whiskey.

Q.—And plenty of it, haven't you? *A.*—Yes, sir.

Q.—You have seen him drunk lots of times? *A.*—Several, yes, sir.

Q.—He is a booze fighter? *A.*—Yes, sir.

Q.—And he was a booze fighter when he came in and got this Wine of Cardui and took a drink of it? *A.*—I don't know whether—

Q.—He was a man who was addicted to alcoholics and wanted something to drink? *A.*—It seemed that way, yes, sir.

Mr. Walker:—I think that is all. Oh, just a minute. Mr. Richter, will you stand up a moment please.

Q.—Didn't you state to Mr. Richter, this gentleman, at the time you signed this statement, that Newt G—— got awful sick from drinking Cardui on that occasion that he drank it, and vomited it up; didn't you tell him that? *A.*—No, I did not tell him that.

Q.—Did he vomit it up? *A.*—No, he did not.

The further hearing of the cause was adjourned until 2 o'clock the same day, April 4, 1916.

April 4, 1916, Afternoon

The Court met pursuant to adjournment.

TESTIMONY OF DR. W. B. KEETON

Dr. W. B. Keeton was called as a witness on behalf of the defendants.

DIRECT EXAMINATION BY MR. SIZER

Dr. W. B. Keeton testified that he is a practicing physician living in Scott's Hill, Henderson County, Tenn. He has attended the wife of Mr. Stanfill for a displacement or a prolapsus of the uterus. He first saw her about five years ago. He saw Mrs. Stanfill six months ago.

Q.—What was she suffering with, Doctor? What was her condition at the time you saw her six months ago? *A.*—Well, at the time I saw her six months ago, she was nervous, very nervous and all—and I inquired of her what she had been taking, and she told me she had been taking Wine of Cardui.

Q.—And did she tell you how long she had been taking it? *A.*—She had been taking it about fifteen years, she said.

Q.—Well, as a physician, what—how did you diagnose her case, and what prescription did you give her? *A.*—Well, I just diagnosed her case, from the symptoms, from what she told me, in regard to what she had been taking, and from her nervousness and all—and I did not give her any treatment whatever. I advised her to quit the Wine of Cardui, and that if she needed anything in the way of a stimulant, to get her some whiskey, and I thought she would get a better result.

Q.—In your opinion, what was she suffering with at the time? *A.*—I took it she was suffering from alcohol, from the effects of taking it.

Q.—Alcohol? *A.*—Yes, sir.

Dr. Keeton then testified that he saw a man named Newt G—— at Ragen when he was drunk and that there was a bottle of Wine of Cardui about one-quarter full in Mr. G——'s pocket.

Q.—How drunk was he? *A.*—Well, he was what I would call a very drunk man. When I first saw him he was able to go, and all, and left Mr. Stanfill's store and went down there to Mr. Power's, about 100 yards. I saw him again when I went to Mr. Power's store and he had got then about where he was not able, I don't think, to travel.

Q.—You speak of Stanfill's store; is that the Stanfill who testified here this morning as a witness? *A.*—Yes, sir.

Q.—You saw this man G—— come out of Stanfill's store and go to some other place? *A.*—Yes, sir; I saw him in the store, and I saw him after he came out.

Q.—I believe you say when you treated Mrs. Stanfill five years ago she was suffering with a misplacement of the womb? *A.*—Yes, sir.

Q.—Was she still suffering with that same thing when you saw her about six months ago? *A.*—No, sir.

Q.—Do you know whether she had an operation in the meantime? *A.*—No, sir; she had not.

Q.—She had not? *A.*—She had not.

THE COURT:—You say you do not know whether she was or was not suffering from that five months ago, or six months ago?

The Witness:—She was not complaining of it.

THE COURT:—You did not make an examination?

The Witness:—No, sir; I did not.

Mr. Sizer: Q.—Who is paying your expenses up here, doctor? *A.*—The AMERICAN MEDICAL ASSOCIATION.

Q.—And they agreed, didn't they, to pay you reasonable compensation for your time while you were up here? *A.*—Yes, sir.

CROSS-EXAMINATION BY MR. WALKER

On cross-examination, Dr. Keeton testified that when he saw Mrs. Stanfill, she would not accept an operation and that he inserted a pessary. He also testified that he had received a letter from Dr. Heizer and two years ago from the AMERICAN MEDICAL ASSOCIATION.

He was asked if he would recognize the signature of Mrs. Stanfill and replied that he would not. He first became acquainted with Dr. Heizer in April, 1915, meeting him in Lexington, Tennessee.

Q.—Did you know at that time, or get information from him at that time, that there was a suit pending— *A.*—No, sir.

Q.—By Wine of Cardui—when did you first know that there was a suit pending by the Wine of Cardui against—or the Chattanooga Medicine Company against the AMERICAN MEDICAL ASSOCIATION? *A.*—Why, I think the first I learned of that there was a representative of The Chattanooga Medicine Company called there to see me.

Q.—What date? *A.*—Well, that was some 18 months ago; I do not remember the exact date.

Q.—Now, at the time you received the letter from Dr. Heizer, you knew then, did you, that there was a suit? *A.*—I had saw Dr. Heizer before I ever received the letter.

Q.—You knew, did you, at the time when you received the letter that there was a suit of the Chattanooga Medicine Company— *A.*—Yes, sir.

Q.—pending against the AMERICAN MEDICAL ASSOCIATION? *A.*—Yes, sir.

Q.—Are you a member of the AMERICAN MEDICAL ASSOCIATION? *A.*—Yes, sir.

Q.—How long have you been a member? *A.*—Well, I was a member, I think, for several years, and then I had dropped out until here quite recently.

Q.—When? *A.*—What?

Q.—When was it you became a member recently? *A.*—Well, from just a little while back, not long.

Q.—What do you mean by a little while back? *A.*—Well, a week or two ago. But I have been taking THE JOURNAL.

Q.—How long have you been in Chicago? *A.*—Me?

Q.—Yes. *A.*—I have been in Chicago a week.

Q.—A week? *A.*—Yes, sir.

Q.—Were you a member when you came up here? *A.*—No, sir.

Q.—Been made a member since? *A.*—Yes, sir.

Q.—Since your arrival? *A.*—Yes.

Q.—Who is paying your expenses here? *A.*—AMERICAN MEDICAL ASSOCIATION.

Q.—Through Mr. Heizer? *A.*—Yes, sir.

Q.—And are you getting pay as a witness—I don't mean as a witness—but for your time, independent of merely fees? *A.*—Yes, sir; yes, sir.

Mr. Sizer:—We admit that, if Your Honor please, that all of them are being paid for their time and expenses.

Mr. Walker:—I do not know how grateful I ought to be for that admission, after this delay.

Mr. Sizer:—It is just to save the time of the question, that is all.

Mr. Walker:—Yes.

Dr. Keeton was then asked whether he accompanied Dr. Heizer in an automobile ride with Mr. Stanfill and to which

he replied in the negative. He was asked if he went with Dr. Heizer to call upon anyone, to which he replied in the negative. He was asked whether he had seen or been informed that Dr. Heizer paid C—— to drink Wine of Cardui, to which he replied in the negative. He was then asked if Newt G—— was a "dipso" and alcoholic, to which he answered yes. Continuing:

Q.—One of these fellows, when he could not get whiskey, or anything, would drink raw alcohol or anything that had booze in it, if he could get it; isn't that the kind of a fellow he was? *A.*—That is my opinion.

Q.—Yes. This day that you saw him with Wine of Cardui in his pocket, did you take the bottle out of his pocket? *A.*—No, sir.

Q.—Well, how could you tell it was Wine of Cardui? *A.*—Why, he took the bottle out himself.

Q.—In your presence? *A.*—In my presence, yes, sir.

Q.—Did he take a drink? *A.*—No, sir; he started to take a drink and Mr. Sturgeson told him not to drink any more—"You have all you need."

Q.—He had all he needed? *A.*—Yes, sir.

Q.—When had you seen him before that? *A.*—I had saw him just probably half an hour before that, at Mr. Stanfill's.

Q.—When you saw him with this bottle, how much was out of the bottle? *A.*—About three fourths of it was gone when I saw him.

Q.—At that time? *A.*—Yes, sir.

Q.—Now, when was it you saw him before, how long before that? *A.*—About half an hour.

Q.—Did he have a jag then? *A.*—How is that?

Q.—He had a pretty good jag on at that time, didn't he? *A.*—He appeared to, yes.

Q.—Half an hour before? *A.*—Yes.

Q.—Where was it you saw him? *A.*—At Mr. Stanfill's store, and I saw the bottle—

Q.—You do not know where he got the jag before he got the Wine of Cardui? *A.*—No; I do not know anything about that.

TESTIMONY OF MR. M. T. CROUCH

Mr. M. T. Crouch was called as a witness on behalf of the defendants.

DIRECT EXAMINATION BY MR. SIZER

Mr. M. T. Crouch testified that he lives in Sardis, Henderson County, Tennessee, and he is a farmer. He testified that he has drunk from one-third to one-half bottle full of Wine of Cardui. Continuing:

Mr. Sizer: *Q.*—Just tell when you first began to take it, and give your experience?

Mr. Walker:—All right. Tell all about it.

The Witness:—I had been buying it for my wife about fifteen or sixteen years, Wine of Cardui for her; and I am a man that has been a booze fighter—would get too much liquor—and I kept drinking along, drinking along, and one time I got too much liquor, like today, and in the morning I felt so bad—I did not feel like I could work. We had been using it—my wife had some for four or five or six years.

Mr. Sizer: *Q.*—You mean Wine of Cardui? *A.*—Yes, sir. That morning I got up, after having too much liquor the evening before, and I did not feel like I could work at all. I just felt bad. My wife said to me—she always called me "Mart"—she says, "Mart, that stuff I am using, Wine of Cardui, makes my head swim." She did not yet tell me to take any of it at all. She said, "it makes my head swim." She got up and got out the milk bucket and went out to the milk gap to milk, and while she was gone—she kept the Wine of Cardui sitting in the safe in the dining room—

Mr. Walker:—In the safe?

The Witness:—And I just went in and took a swallow of it out of the bottle. And I came back and sat down again, and I was still feeling bad, you know, I did not feel I could go on at all, and she came back from milking, and I was sitting there, and when she got through with the milk—she had some young chickens out there that she wanted to see, and she took up some feed and went out to see to them, and when she was gone. I just slipped back to the bottle, and I—

Mr. Walker:—You had the combination to the safe.

The Witness:—And I took a long—a good drink or two—another drink—and I felt a little better; and I thought I would go to work after a little, and I did so. And from that on I never need be short of liquor, and if I could not get some handy, and we had some Wine of Cardui, why, I would drink some of it.

Mr. Sizer: *Q.*—Did it have about the same effect as liquor? *A.*—Yes, sir.

Q.—And have you been drinking it right along since that time? *A.*—Yes, sir; I have drunk it off and on now for that length of time.

Q.—What do you mean by "safe," you spoke of the Wine of Cardui being kept in the safe? *A.*—In the dining room where she kept her dishes.

Q.—That is just a cupboard, is it? *A.*—Yes.

Q.—You call it a safe down there? *A.*—Yes, sir.

Q.—You say your wife had been using it fourteen or fifteen years? *A.*—Yes, sir; some fifteen or sixteen years.

Q.—How did she happen to commence taking it; do you know? *A.*—Well, I think just from hearing other women talking about it being a woman's tonic; she just got to using it.

Q.—Yes. Do you know how much she was in the habit of using in the course of the day? *A.*—Well, when she first commenced taking it she was more careful, I noticed, about taking a spoon and measuring it out in the spoon, and taking it that way, for some two or three years may be; and then I noticed that she quit using her spoon, and when she would want her dose, she would just take the cork out of the bottle, turn it up and take a swallow of it.

Q.—About how much would she take that way?

Mr. Walker:—A swallow of it, he said.

The Witness:—Oh, well, just like she would take a good swallow, just turn up the bottle like and drink it down just like you would take a drink of water or something.

Mr. Sizer: *Q.*—Do you know about how much she would take, Mr. Crouch, when she would gulp it down that way? *A.*—No, I never did just pay right close attention to the bottle to know anything about how much it was. Then I have seen her go and take more than one dose that way. She may be would take a dose, when she would first go in after I would make a fire in the stove, and may be she would go to the safe for a swallow of that; may be before she would get breakfast done, she would take another. I have seen her drink as high as a third of one before breakfast in the morning, taking swallows out of the bottle.

Q.—How many drinks does she take a day of it now? *A.*—Now, she don't drink it like that way; as I reckon—I never did ask her, but very little questions about it. She was always bitterly opposed to me drinking liquor, and I never did question her, you know, concerning that at all. I just thought that was her business, and if she did not quarrel with me about drinking, I had no kick coming about what she done.

Q.—Mr. Crouch, do you know Dr. Heizer? *A.*—Yes, sir.

Q.—Do you see him in the court room now? Stand up, Dr. Heizer.

A.—Yes, sir.

Q.—Is this Dr. Heizer? *A.*—Yes, sir; that is Dr. Heizer—the man he said he was.

Q.—Did he ever come to see you? *A.*—Well, he came to my town on the—well, I said that town—I lived about two miles from town. I was up at that town at work, and Dr. Heizer came to Dr. John Keeton's office there at Sardis, and I was passing along, and Dr. Keeton called me in and introduced me to Dr. Heizer.

Q.—Now, what conversation did you and Dr. Heizer have, if any, about Wine of Cardui? *A.*—What did you say?

Q.—Did you have any talk with Dr. Heizer about Wine of Cardui? *A.*—Dr. Heizer asked me if I used Wine of Cardui.

Q.—Well— *A.*—And I told him I did.

Q.—Well, what did he say then? *A.*—Well, he said, "How much do you use a day?" I says, "I have drunk some," and I says "I have kept it in my home, and my wife takes it." I said, "I have drunk some." He says, "About how much would you take at a drink?" I says, "I have drunk from a third to a half a bottle of it." He says, "That will make you sick, won't it?" I said, "No, sir; it never has." I said, "I have taken it several times that way, and it never done much." And he said, "Well, that seems like an unreasonable dose of it," he says, "would you care to drink some of it?" And I said, "No, sir, I don't know that I would."

"Well," he says, "let me see you, then"—he says—"drink some." "Well," I says, "get up some, if you want me to drink it, and I will drink it." And he handed me a bottle, and I had taken a swallow out of the bottle, and he says, "Well, now," he says, "would you care to have me take your photograph when you drink that Wine of Cardui?" And I says "No, sir, I don't care; I never done anything that I cared for anybody knowing of it, while I was telling the truth about it."

Q.—And so did he take your picture while in the act of taking the Wine of Cardui? *A.*—While I was drinking it, yes, sir.

Q.—When was that? *A.*—That was about last October, when I saw Dr. Heizer; that is the best I remember about it now.

Q.—Did he get you to go with him anywhere? *A.*—No, sir.

Q.—Or render any service that he paid you for? *A.*—No, sir; he paid me for my time, or said he would, for the time I lost from my work.

Q.—While you were drinking the Wine of Cardui? *A.*—Yes, sir.

Q.—All right. How much did you drink on that occasion? *A.*—Well, I guess a third of a bottle, may be more. I could not say positively just how much I drank.

Q.—You went from your farm into town that day? *A.*—Yes, sir; I went from the place I was living at—I don't own a farm myself; I am a renter myself—but I went from home up there, I used to, to work.

Q.—Did Dr. Heizer send out for you to come in? *A.*—No, sir; I was going up there. I just passed along by Dr. Keeton's office—Dr. John Keeton, my family physician—and he just asked me in and introduced me to Dr. Heizer.

CROSS-EXAMINATION BY MR. WALKER

Q.—Had you ever met Dr. Heizer before this occasion with Dr. Keeton? *A.*—No, sir. I did not know there was such a man in the world.

Q.—Dr. Keeton you are speaking of now— *A.*—Yes, sir.

Q.—is a nephew of the doctor that was on the stand a minute ago? *A.*—Yes, sir.

Q.—He gave you two dollars before you drank the Wine of Cardui and five dollars afterwards? *A.*—No, sir.

Q.—What did he give you before you drank the Wine of Cardui? *A.*—He never gave me anything.

Q.—Did he give you anything afterwards? *A.*—Well, he said he would pay me for my time I lost from work.

Q.—Did he give you any money— *A.*—That is the proposition.

Q.—Did he give you any money? *A.*—Yes, sir.

Q.—How much did he give you? *A.*—He gave me one dollar.

Q.—One dollar? *A.*—Yes, sir.

Q.—He did not give you two, then five? *A.*—No, sir; he did not.

Q.—How long were you drinking it? *A.*—That—what?

Q.—For what he paid the dollar? *A.*—Well, I guess a minute—may be more—not very long—just like turning it up and swallowing it like a glass of water.

Q.—A dollar a minute. Did he leave the bottle with you after you got done, or did he take it away? *A.*—I don't know what he done with the bottle.

Q.—He did not leave it with you? *A.*—No, sir; he did not.

Q.—How many bottles did he have there? *A.*—I don't know.

Q.—Now, do you know a man by the name of Pink Hatchet? *A.*—Yes, sir.

Q.—Look at this document that I now show you, marked Plaintiff's Exhibit F; and state whether or not the mark between the name M.T., M.T., not empty—A.—M.T., M.T.

Q.—Those are the initials, M.T.? *A.*—Yes, sir.

Q.—They call you that when you are full, or when you are sober, M.T.? *A.*—Yes, sir.

Q.—So that the mark made between the M.T. Crouch is your mark, made—see if you recall it—made by you and witnessed by Pink Hatchet?

Mr. Sizer:—Can you identify your mark from anybody's else mark?

Mr. Walker:—I am going to ask him if he did not sign his mark to that document in the presence of Pink Hatchet, who signed it as a witness.

The Witness:—Well, I could not say. I could not say,—

Mr. Walker:—Is Mr. Richter here?

The Witness:—I am a man who has got no education whatever.

Mr. Walker: *Q.*—You know when you make your mark, don't you? *A.*—I made a mark to a statement; yes, sir.

Q.—Was Mr. Richter there at the time, this gentleman (indicating). *A.*—That man never told me his name—this gentleman.

Q.—Was he there with Pink Hatchet? *A.*—This gentleman—

Q.—Was he there with Pink Hatchet? *A.*—Yes, sir; he was, but he never told me his name.

Q.—Was this (indicating paper) read to you there? *A.*—No, sir.

Q.—By Mr. Richter or Pink Hatchet? *A.*—No, sir. He came to my house.

Q.—Was this document you marked read to you? *A.*—No, sir; it was not.

Q.—Read to you before you made your mark? *A.*—No. That man came to me—

Q.—No, no. Was it read to you before you put your mark on it—just answer the question? *A.*—No, sir; it was not.

THE COURT:—Was it read to you at any time?

The Witness:—No, sir.

Mr. Walker: *Q.*—How did you come to make your mark to it? *A.*—That gentleman just asked me if I cared to make a statement in regard to Wine of Cardui; and I said, no, sir; I don't. And he said—he just sat down on the edge of the porch—I was working for Mr. Herbert Stanfill—and his wife was expecting to die, and it was very cold that evening. I was there that night, and we were busy feeding—and I was helping him about his stock—he is a man that keeps a great lot of stock, and we were feeding. And he said, "I will not detain you but just a minute." He sat down and wrote a few lines, and said, "Will you come to make your mark to this." And I said, "No." And I made the statement just like I made it here, to Dr. Heizer, and that man asked me if I was a user of Wine of Cardui, and I said, "I am." And he said, "Does your wife take Wine of Cardui?" And I said, "Yes, sir."

Mr. Walker: *Q.*—Mr. Crouch, did you make a statement to Mr. Richter in the presence of Pink Hatchet? *A.*—No, sir; Pink Hatchet—

Q.—About the use of Wine of Cardui— *A.*—No. Mr. Richter, the gentleman here—Pink Hatchet was sitting out in the road, thirty yards and more away. We were sitting on the porch floor, and he just called to him and said, "Will you witness this?" He never read it to him or me.

Q.—Did he write while you were talking? Did Richter write while you were talking? *A.*—I was not talking. He was just sitting there. I just stated to him about what I had said about the Wine of Cardui.

Q.—Did you tell him in that connection that Dr. Heizer was there to see you? *A.*—I did.

Q.—That he bought a couple of bottles? *A.*—I did not. I did not tell him that he bought any.

Q.—Did you tell him that you drank a third of a bottle? *A.*—Yes, sir; from a third to a half.

Q.—And that while you were drinking it, Heizer took your picture? *A.*—Yes, sir.

Q.—And that he offered you five dollars a day and expenses— *A.*—No, sir; I never told him that he offered—

Q.—Did you tell him that— *A.*—No, sir; I did not— he did not even ask me.

Q.—If you should be wanted as a witness— *A.*—He did not stay with me, but only a—

Q.—Did you tell Richter that? *A.*—No, sir; I did not.

Q.—Did you tell him that you were in the habit of drinking a third of a bottle of Cardui at a time— *A.*—I told him—

Q.—after getting over a drunk? *A.*—Yes, sir.

Q.—Did you tell him that? *A.*—Anywhere from a third to a half.

Q.—Did you tell him that you never bought it in your life as a beverage to drink? *A.*—No, sir; I did not tell him that. He did not ask me.

Q.—Did you tell him that you bought it for your wife for female troubles? *A.*—Yes, sir; I told him—

Q.—Did your wife have female trouble? *A.*—Well, I could not tell you about that?

Q.—Did you buy it for her for female trouble? *A.*—She claimed it was a good woman's tonic—

Q.—No, did you buy it for her for female trouble? *A.*—That is what she claimed it was for. I never had any doctor make any examination, or anything of that kind.

Q.—All right. *A.*—If that ain't satisfactory about Wine of Cardui—if you people ain't afraid of being—

Q.—Just a minute. There is not anything doing now. How frequently did you buy Wine of Cardui for your wife? *A.*—Why, I would buy a bottle a month. It just was all owing to how much I drunk.

Q.—Well, if you bought any more than the bottle a month, it was because you wanted some? *A.*—Well, I guess that would be so.

Q.—How many would you buy if you wanted to get more than a bottle a month for her, would you buy it for yourself? *A.*—Why, I would take as much as half of it.

Q.—Half of one bottle? *A.*—Yes.

Q.—But when you wanted some of it would you buy two bottles or three bottles? *A.*—No. I would just get on a drunk like I told you in commencing—

Q.—Then you would take some of the bottle? *A.*—That is the only time I drank it—

Q.—Just to sober up? *A.*—like I told you, after taking too much liquor.

Q.—And you would take some out of that one bottle a month you bought for her, if there was any there in the house? *A.*—Well, there was always some. We never got out—I would have to true it up, to keep her from catching on to me using it so much.

REDIRECT EXAMINATION BY MR. SIZER

Q.—When was it, Mr. Crouch, that this man Richter came to see you to get that statement? *A.*—Well, it has been some time since Christmas he was at my house; I could not say just positively just what time it was.

Mr. Sizer:—Will you let me see, please, that paper you identified here?

Mr. Walker:—It is not in evidence, but I will tell you—

Mr. Sizer:—I just want the date. What is it, January this year?

Mr. Walker:—Do you want it in evidence?

Mr. Sizer:—Well, no.

The Witness:—I could not say positively. I just know it has been since Christmas, he was at my house.

Q.—Do you know about how long— *A.*—I know that Mr. Stanfill's wife was taken down sick Christmas Eve day, and I was there on his place and he had me hired to help him about his feeding, and I was up there assisting him in his feeding when this gentleman came.

Q.—Was that some few weeks after Christmas? *A.*—Yes, sir.

Q.—That is last Christmas? *A.*—Yes, sir; something like a couple of weeks after Christmas, for she got sick on Christmas Eve day.

Q.—That was a short time after Dr. Heizer was there? *A.*—No. Dr. Heizer was there along back, I think in October, when I met Dr. Heizer.

Q.—Now, Mr. Richter, this man, asked you what you knew about Wine of Cardui? *A.*—Yes, sir.

Q.—And you told him just about as you have told the jury here? *A.*—Yes, sir; that is just exactly what I told him.

Q.—And then he wrote out something on a paper, and you made your mark to it? *A.*—Yes, sir.

Q.—You cannot read or write, can you? *A.*—No, sir. Mr. Hatchet was not as close as here to the back of the house, and he just called to Mr. Hatchet to sign his name to the paper, asking me to make my mark; and that is just exactly the statement I made to the gentleman.

Q.—Did Mr. Richter tell you who he was representing? *A.*—No, sir; he did not. He did not tell me that.

Q.—Did he tell you where he was from? *A.*—No, sir.

TESTIMONY OF J. J. PARROT

Mr. J. J. Parrot was called as a witness on behalf of the defendants.

DIRECT EXAMINATION BY MR. SIZER

Mr. J. J. Parrot testified that he lives in Slaiden, Dixon County, Tenn., that he is a farmer; he first began to use Wine of Cardui in 1913.

Q.—How did you happen to drink it first? *A.*—Well, I got real boozy, and I wanted a little something to stimulate me, and I found out that had something to it, and I bought it and drank it.

He purchased Wine of Cardui in the general store at Slaiden from his uncle. It had an effect on him similar to whiskey. The witness knew that an uncle, F. D. P——, drank Wine of Cardui and saw him open a bottle, take it out and drink about half of it and later on in the day the balance of the bottle.

The witness testified that he knows Dr. Heizer; that he saw Dr. Heizer in Slaiden and that a picture was taken while the witness was drinking Wine of Cardui.

CROSS-EXAMINATION BY MR. WALKER

Mr. Walker asked the witness if the uncle mentioned was dead, to which he answered yes. The witness testified that he has been a whiskey drinker all his life and occasionally goes on sprees.

Mr. Walker then offered in evidence a letter stating:

Mr. Walker:—(Reading)

"Slaiden, Tenn., Dixon County,
"April 26th, '15.

"To Whom it May Concern:—

"This is to certify that Dr. Heizer asked me to come to town, paying me $2.50 for my time. He asked me if I drank any Cardui. I told him I did drink it two or three times in my life, to see what there was to it, more a matter of curiosity. I found there was nothing in drinking Cardui, only a bad taste. I never drank Cardui to get drunk, nor did I ever drink it for such purpose; only as above stated, and I told him so. Personally, from all reports, I consider Cardui a good medicine; and certainly would not resort to it for a beverage purpose.

"(Signed) J. J. Parrot."

Mr. Walker:—What is your first name? *A.*—Justin.

THE COURT:—All of the last paragraph may be stricken out, except the part which says, "personally, I would not resort to it for a beverage." What he heard as to its being a good medicine is immaterial.

Mr. Walker:—You mean this—

THE COURT:—That last paragraph.

Mr. Walker:—"Personally from all reports"—

THE COURT:—Don't read it again, please, Mr. Walker. It all may be stricken out, except what relates to it being a beverage.

Mr. Walker:—Then this part, "certainly would not resort to it for a beverage," is in.

THE COURT:—Yes.

REDIRECT EXAMINATION BY MR. SIZER

Q.—Who brought this paper, this paper to you, Mr. Parrot? *A.*—Why that gentleman across over there (indicating); I do not know his name.

Q.—The gentleman—stand up, Mr. Richter, please—is that the gentleman? *A.*—Yes, sir.

Q.—When was it he brought it to you? *A.*—Why, I am not certain just the time when that was.

Q.—Did you write this paper yourself? *A.*—No, sir; he had written it—he wrote it.

Q.—Did he write it there in your presence? *A.*—He was sitting down on the porch, I think.

Q.—Did he read it over to you after he had written it? *A.*—Why, he is supposed to, yes, sir.

Q.—Did you tell him that you had drunk Wine of Cardui only two or three times, as a matter of curiosity? *A.*—I don't think I ever told him any such thing.

Q.—Did you tell him that there was nothing in drinking Cardui, only a bad taste? *A.*—No, sir; I never told him that.

Q.—Who is Scott Dunning, whose name is signed here? *A.*—He is a young man down there at Slaiden. He is in the court room.

Q.—He came there with Mr. Parrot, did he? *A.*—He came there with the other gentleman. Would you care for me seeing that paper again—

Q.—You are entitled to look at it (handing paper to witness). When this gentleman came there with this paper, did he tell you he was representing the Chattanooga Medicine Company? *A.*—Yes, sir; he told me he was representing the Chattanooga Medicine Company.

Q.—Did he tell you he was following Dr. Heizer around? *A.*—Yes, sir.

Mr. Sizer:—That is all.

Mr. Walker:—Didn't you tell him you did not blame him? *A.*—No, sir; I never told him that.

TESTIMONY OF R. F. SABATE

Mr. R. F. Sabate was called as a witness on behalf of the defendants.

DIRECT EXAMINATION BY MR. SIZER

Mr. R. F. Sabate testifies that he is deputy sheriff residing in St. Augustine, Fla. That he has general supervision of the county prisoners, that he has seen Wine of Cardui used as a beverage twelve or fifteen times, and that it has an alcoholic effect on the prisoners under his charge whom he has seen drinking it.

CROSS-EXAMINATION BY MR. WALKER

On cross-examination Mr. Sabate testified that the first person he saw drinking Wine of Cardui as a beverage, was "about in 1907." The drinker was a man, Joseph V——, who was coming down the river. Mr. V—— died about four years after the incident. At that time during the course of a 10-mile trip up the river, about three hours, the witness saw Mr. V—— drink two bottles. In the party were the witness, Mr. V—— and Mrs. V——. Mr. V—— was a heavy whiskey drinker. The witness also saw A. V. H—— drink Wine of Cardui in 1908. He saw Mr. H—— drink it during a continuous spree of three or four days. H—— was a "dipso" or alcoholic.

The witness also saw one of the women prisoners, Hattie F——, cook at the jail, drink Wine of Cardui. Her home was near Hastings, Fla.

Q.—Is she living or dead? *A.*—She is living.

Q.—She is living. And how frequently had you seen her drink it? *A.*—Well, she would drink it every chance she could get.

Q.—Well, how frequently would she get a chance and you see her? *A.*—Well, just as soon as she would get the dollar she would get the Wine of Cardui.

Q.—And she would get the dollar once a month? *A.*—Oh, three or four times a week—four or five times a week.

Q.—How much did you ever see her drink at any one time? *A.*—Well, I have seen her take the bottle up to her head and drink what I would call a good, big drink of whiskey.

Q.—Take a swallow out of the bottle, what you would call? *A.*—Yes.

Q.—Over that six months? *A.*—Yes, during that period of six months.

Q.—Well, who else in the jail—who else have you ever seen drink it? *A.*—Well, there is a woman in jail now that tries to get it. We prohibit it now from going in there. Irene D——.

Q.—Well, have you ever seen her drinking it? Had you ever seen Irene D—— drink it? *A.*—Yes, I seen her drink it once.

Q.—In jail? *A.*—In jail.

Q.—Where did she get it? *A.*—She got it brought in to her.

Q.—Now is there anybody else you have ever seen drink it? *A.*—Yes, there was another woman at Espanola, I think her name was Nancy M——.

Q.—Was she in jail? *A.*—No.

Q.—Where did you see her drink it? *A.*—At Espanola.

Q.—Well, whereabouts, in her house, or where? *A.*—No, in the store there.

Q.—In a drug store? *A.*—General merchandise store.

Q.—Just tell the jury how she drank it. *A.*—Well, she would go in there and buy a bottle of it and go outside and take the stopper out of it and take a drink of it, and put it in her pocket and go on home.

Q.—And go on home? *A.*—Yes.

Q.—And how frequently did you ever see her do that? More than once? *A.*—Yes.

Q.—How— *A.*—I have seen her half a dozen times.

Q.—Well, how much time elapsed between each time? *A.*—Well, perhaps about every pay day, about every month.

Q.—About every month? *A.*—Yes, sir.

Q.—Anybody else? *A.*—Well, not that I could—I have seen the turpentine niggers drink it there.

Q.—The turpentine niggers? *A.*—Yes.

Q.—When they couldn't get turpentine? *A.*—Oh, they could get plenty of turpentine, but they drink it as a beverage.

Q.—Are those women that you named colored or white? *A.*—Colored.

Q.—Please tell me if you know what penitentiary H—— is confined in? *A.*—Well, the Florida penitentiary, but I don't know what camp he is in.

Q.—Is he colored or white? *A.*—He is white.

Q.—Did anyone come here with you? *A.*—Yes.

Q.—Who? *A.*—Dr. Sam. Worley.

The witness was asked concerning Dr. S. Worley, who is the county physician and how he came to speak to Dr. Worley concerning the use of Wine of Cardui as a beverage. He testified that of 300 female prisoners a year confined in prison, nearly all are colored.

TESTIMONY OF DR. S. W. EVERETT

Dr. S. W. Everett was called as a witness on behalf of the defendants.

DIRECT EXAMINATION BY MR. SIZER

Dr. S. W. Everett who has been practicing medicine for thirty-three years resides in Middle Georgia, near Covington, near Almond. He conducts a drug store.

Q.—Have you had any experience with Wine of Cardui in your family? *A.*—Yes, sir.

Q.—Well, just relate that experience to the jury. *A.*—Well, my daughter came to me, that was in 1907, and said that she felt bad, and had a bearing down in the lower part of her bowels, and she had been reading the books—the Ladies' Birthday Almanac, and said she had all the symptoms that that book described, and if I didn't care she would take some Wine of Cardui. Well, I had it to sell, and I says, "Well, if you want it I will let you have it at what it cost."

Q.—Is your daughter married and living away from you? *A.*—No, she is living there with me.

Q.—And did she— *A.*—She bought and used five and a half bottles. She bought six bottles, but didn't drink quite all the last one.

Q.—That was in what year now? *A.*—That was in 1907.

Q.—Well, did it have any effect on her? *A.*—None, only the alcohol effect. She got "giddy head" as she called it, and would go to bed.

Q.—Did her condition improve any? *A.*—Not a bit.

Q.—Did you afterward have her examined by a physician and treated? *A.*—I sent her to Atlanta to Dr. W. S. Kindrick, and he examined her and said she had a floating kidney. I was sick at the time.

Mr. Walker:—I object to what he said.

Mr. Sizer: Q.—Well, did he treat her for floating kidney? *A.*—Dr. Kindrick did.

Q.—Yes. And did she get well? *A.*—Yes, sir.

Q.—Do you know about any people buying Wine of Cardui from your store, or otherwise, and using it as a beverage? *A.*—Yes, sir.

Q.—Well, now, state what you know about that? *A.*—Well, one Mr. Will M—— would frequently buy it.

Q.—Just give us that name so we can get it. *A.*—M——.

Q.—Spell it, please? *A.*—M——.

Q.—All right. Now go on. *A.*—He was a man that is in the habit of drinking a good deal, and often times, the first year we started there, he would be on a drunk of a Saturday, and Sunday morning he would come along and buy a bottle of Wine of Cardui and drink about half of it, and tell me to set it back for him, and in an hour or so, or two hours, he would come back and drink the other half of it and go on home. He did that frequently.

Q.—Commencing about when? When did you first ever see him do that? *A.*—1913 and '14.

Q.—Well, have you seen other people drink it as a beverage? *A.*—Yes, another man by the name of John N——.

Mr. Walker:—John what? *A.*—John N——, N——.

Mr. Sizer: Q.—And how did he take it? *A.*—He was in about the same fix that the other man was, and he would drink it to taper off on. He would drink it about a half a bottle at the time.

Q.—Well, anybody else? *A.*—Yes, and another man by the name of Henry H——.

Q.—He would take it the same way? *A.*—Drink it the same way.

Q.—Anyone else you recall? *A.*—No, sir; only just in a general way, some other people have drank some of it, but I don't remember those. They didn't drink but a little of it, those.

Q.—Any women buy it and take it as a beverage, to your knowledge? *A.*—They never drank it in my house.

Q.—Any women buy it in large quantities? *A.*—No, sir.

Q.—Are you selling it now, Doctor? *A.*—Sir?

Q.—Do you sell Wine of Cardui now? *A.*—No, sir.

Q.—How long has it been since you quit? *A.*—I sold—I had one bottle in January, 1914, and sold that, and never have used any since.

Q.—Why did you quit it?

Mr. Walker:—That is objected to.

THE COURT:—Objection sustained.

Mr. Loesch:—May I ask what is the objection? Why is that objectionable? Can't a man state why he quit using it, quit selling it?

THE COURT:—I can think of a great many things that might be brought to the attention of the jury at this time and the reason given. Does it make any difference why he quit it?

Mr. Loesch:—I think it does.

THE COURT:—Well, you may save the point. Let me put this illustration: Supposing he testified—which of course is not the case here—that the United States inspector came down there and told him he couldn't sell liquor at retail unless he paid a license of $25 a year; that would not be competent evidence in this case to prove it was alcohol.

To which ruling of the Court the defendants, etc., excepted.

CROSS-EXAMINATION BY MR. WALKER

Q.—Dr. Everett, where is your daughter now? *A.*—She is at home.

Q.—Is she married or single? *A.*—She is married.

Q.—Does she live with you? *A.*—She don't live in the house with me now.

Q.—Well, was she married at the time she took this Cardui that you speak of? *A.*—Yes, sir.

Q.—And she lived then in your house? *A.*—Yes, sir; she did.

Q.—What is her name now? What is your daughter's name now? *A.*—Lillie M——.

Q.—Lillie what? *A.*—M——.

Q.—And she lives at Almond, Georgia, does she? *A.*—Yes, sir.

Q.—Now, how long did she take Wine of Cardui? *A.*—Well, I couldn't tell you exactly how long she was taking that amount of bottles, that five and a half bottles. I don't remember how long she was taking that.

Q.—And how long ago was it? *A.*—1907.

Q.—And she quit taking it? *A.*—She quit taking it, never taking any of it since she went to Atlanta.

Q.—Has she had any female troubles since? *A.*—No, sir.

Thereupon, at 3:30 p. m., an adjournment was taken until 10:30 a. m. Wednesday, April 5, 1916.

April 5, 1916, Morning

The Court met pursuant to adjournment. Dr. W. F. Ashmore was called as witness for the defendants.

DIRECT EXAMINATION BY MR. SIZER

Dr. W. F. Ashmore testified that he is a practicing physician residing in Aniston, Aniston County, South Carolina. He has been practicing for twenty-two years, the first fifteen years almost exclusively among the cotton mills and rural districts of Oconee County, South Carolina and Greenville County, South Carolina.

Q.—What is the general health conditions? *A.*—The general condition of the women of the cotton mills of South Carolina is bad, due largely to bad sanitation, ventilation and lack of education.

Q.—What kind of troubles does that induce? *A.*—We find in the mill districts—the disease we find is the hookworm disease, malaria and tuberculosis.

Q.—Doctor, do you know McElree's Wine of Cardui? *A.*—Yes, sir.

Q.—Can you state the extent to which that is taken in the region that you speak about?

Mr. Walker:—That is objected to.

A.—It is used very extensively.

Mr. Walker:—I move that his answer be stricken out.

THE COURT:—Just pause long enough, Doctor, so that we may pass on the objection. We want to know only what has come under your personal observation.

A.—Well, I will get to that just presently. I have seen in these mill districts, the women come in from their work and before going to their supper or dinner or whatever it might be, go to their Wine of Cardui bottle and drink it out of the bottle as they would do for an ordinary beverage of anything else. On inquiry I have the names and I will give you the names.

Objections were made to introduction of general evidence. The court finally stating:

THE COURT:—Let us find out when the doctor saw these patients and whether it was at a time before this suit had been brought or was in contemplation so far as he knew.

Mr. Sizer: Q.—Now, Doctor, I will get you to take the specific cases that you have treated and of which you have a memorandum or have now in mind.

Q.—Why, the case of Mrs. P. A. M——, during the year of 1910 and 1911.

THE COURT: *Q.*—That was before you ever heard anything about this suit? *A.*—Oh, yes, yes, sir. I was their family physician. She was suffering from—I will just read the history.

Mr. Walker:—That is objected to.

Mr. Sizer: Q.—Well, you can look at your memorandum and refresh your recollection, and then just state what she was suffering with and what you were called to treat her for. *A.*—She had an ovarian cyst and a floating kidney and she had been taking Wine of Cardui for this trouble.

Q.—Did she tell you, in giving the history of her case, that she had been taking Wine of Cardui? *A.*—Yes, sir.

Q.—How long did she say she had been taking it? *A.*—This was 1910—1911.

Q.—Well, did she tell you how long prior to the time when you treated her, she had been taking it?

Mr. Walker:—That is objected to.

A.—I don't remember.

Mr. Sizer:—Well, he says he does not remember, anyway.

Q.—Now, Doctor, had that treatment from Wine of Cardui in any way benefited the thing she was suffering with?

Mr. Walker:—That is objected to.

A.—No, sir, not to my knowledge.

THE COURT:—He says not to his knowledge.

Mr. Walker:—Well, he might state the facts, but he is giving opinion evidence.

The Witness:—In this case they operated.

Mr. Sizer:—Let the Doctor go on and tell the symptoms.

The Witness:—Removed the ovarian cyst and put her on a general reconstructive tonic treatment.

Q.—And she did recover? *A.*—She recovered up to about two years after that when she had a recurrent attack of gonorrheal endometritis which affected the tube and she was operated on by another physician and died.

Q.—The fallopian tube you say? *A.*—Yes, sir.

Q.—Now, take the next case? *A.*—Mrs. J. H. M. I will give you those names if you wish them in confidence. I do not care to otherwise.

THE COURT:—Let me ask counsel; are the other cases that the doctor is to testify about, typical of the one that he has just told us of? I cannot see that that has any bearing on the issues here at all.

Mr. Sizer:—I understand, if your Honor please, that each one of these cases he is testifying about are cases of women who had been taking Wine of Cardui and then came to him for treatment.

THE COURT:—The doctor don't know how long she had been taking it.

Mr. Sizer:—No, I don't know that he does.

THE COURT:—Or how much, or whether these other people had been taking it in the specified dose.

Mr. Sizer: Q.—Now, with respect to the next case you have, Doctor, do you know, or did the patient tell you, in giving the history of the case, whether she had been taking Wine of Cardui or not?

Mr. Walker:—That is objected to.

THE COURT:—He may answer.

To which ruling of the Court the plaintiffs, etc., excepted.

Mr. Walker:—Let us find out what the case is, what he was treating for, if this evidence is to go in.

THE COURT:—I was trying to take the short way to learn whether the evidence was relevant here, but counsel may go the other way round.

Mr. Walker:—I think it is irrelevant anyway upon the grounds that we have already stated, and if it is—your Honor will find, if it is an operative case that there is no claim for Wine of Cardui as being a cure for operative cases, taken out of the bottle or in any other way, and we think that they should ask the question as to whether the second case was an operative case, so that your Honor may see right away.

THE COURT:—That was my recollection of the literature.

Mr. Walker:—Yes.

THE COURT:—So, as to operative cases, we are wasting time going into it.

Mr. Sizer:—We don't concede that at all. It is true, that on the bottle, they say they do not recommend the medicine for operative cases, but in the literature, as we think that we will show when we come to get it in, no such exceptions are made.

Mr. Hough:—It seems to me that it is time for them to put in the literature and the labels upon which they are counting. Now they have gone thus far and asked the witnesses questions on the hypothesis or theory that we advertised it for this, that and the other, without showing what we really did advertise it for.

THE COURT:—I think Mr. Hough's suggestion is well made, because the Court will be in a position, if you introduce the literature here that you rely upon to know whether the evidence is pertinent.

Mr. Sizer:—The proposition is this, may it please your Honor: aside from that question, here is a remedy that is sold promiscuously all throughout the country in country stores, cross roads stores and drug stores.

THE COURT:—That is admitted.

Mr. Sizer:—And a woman does not know probably in one case out of 100, whether she has got something that needs an operation or something that needs Wine of Cardui.

THE COURT:—What is the objection to offering your literature?

Mr. Sizer:—None that I know of, except this: we have a number of witnesses from a distance whose evidence we want to introduce in order to let them get back home.

Mr. Hough:—Well, we are both in that position.

THE COURT:—How long will it take you to read your literature, that is the literature of the Plaintiff's?

Mr. Sizer:—It will take some time I suppose.

Mr. T. J. Scofield:—It will take a half a day or a day.

Mr. Walker:—Suppose it does take half a day or a day, I don't believe we wish to have a lot of immaterial evidence in here, just to have it stricken out.

THE COURT:—I think we had better do it that way. You may introduce the literature first, that is, if you have it here, and if you have not, you may do it at 2 o'clock. I realize that sometimes when the Court upsets the plans of a lawyer in reference to the way in which he is going to handle his case, that he needs a little time to readjust himself.

Mr. Sizer:—Well, sir, we can introduce it at 2 o'clock, if your Honor will permit us to go on with this witness.

THE COURT:—Yes.

Mr. Sizer: Q.—Now proceed with that, Doctor.

Mr. Walker:—I object to that, and I suggest that they —if this was an operative case first, Judge. We maintain that there is nothing in the literature or on the carton or in anything else that justifies them in saying that we make any claims for cures in cases that require operation, or that the medicine effectively assists operative cases. Now it is only fair to us that the Doctor should be asked to specify whether the case is or is not or was not an operative case.

THE COURT:—He may do that, but I will let him proceed for the present. I will save the point for you.

To which ruling of the court in permitting the evidence referred to, before the introduction of the said literature, the plaintiffs, etc., excepted.

The Witness:—Yes, I can make that satisfactory, I think.

Mr. C. J. Scofield:—On our part we contend that they state in their literature—advise them to go ahead with Wine of Cardui from the very beginning.

THE COURT:—I have ruled that you may examine this witness, notwithstanding the objection, and I will save the point for the plaintiffs. This witness may be examined awaiting the reading of the literature.

Mr. C. J. Scofield:—I beg your Honor's pardon.

Mr. Sizer: Q.—Now, proceed, please.

The Witness:—This case, Mrs. J. H. M. I saw her in 1909. She was suffering from profuse menstruation.

Q.—Profuse menstruation? *A.*—Yes, sir.

Q.—Do you know how long she had been suffering—did she tell you? *A.*—No, I do not remember whether she told me or not, but quite a good while; I could not give the exact date.

Q.—Did she tell you she had been taking Wine of Cardui? *A.*—Yes, sir.

Q.—Had it remedied the trouble?

Mr. Walker:—That is objected to.

A.—No, she had not received any benefit from it. This patient also had pellagra.

Mr. Sizer: Q.—Did you proceed to give her treatment? *A.*—I advised curettage. She had complete retroversion of the uterus and I did a curettage which seemed to relieve her until about the first of February of this year, when she was sent back to me from Danville, Virginia.

Mr. Walker:—Now, it appears, your Honor, to be an operative case.

The Witness:—Wait till I get through, and then see.

THE COURT:—I am going to let it go in at this time and you may save the exception.

To which ruling of the Court the plaintiffs, etc., excepted.

The Witness:—In this case I did a curettage.

Mr. Sizer: Q.—What is a curettage? *A.*—Scraping out the womb, the cavity of the womb with a spoonlike instrument. Also brought about a menopause, or stopped the menstruation, and brought about change of life by use of the x-ray.

Q.—What was her age, Doctor? *A.*—She was 40. She went home about 10 days ago, apparently well, with the exception of the retroversion, which no medicine—in other words, retroversion is a mechanical condition and Wine or Cardui or no other medicine will relieve it.

Q.—Is there any other case that you have in mind? That is, cases now, where you have treated women who have been taking Wine of Cardui? *A.*—Take—your Honor will have to give me time. I had a severe chill last night, and I have an awful headache this morning.

THE COURT:—Take your time, Doctor.

The witness then described a case, Mistress J. D. R., who had taken Wine of Cardui to his certain knowledge from 1894 up to about the 4th of July, 1914. The patient had measles when about 14 years that disturbed or suppressed the menstruation of the patient. This patient was a sister of the witness. She was taken to Dr. Howard A. Kelly's private hospital in Baltimore, was operated on and is now in good health. The witness testified that his sister did not derive any benefits from Wine of Cardui.

He described the case of Mistress J. H. L., who died with pellagra. She had taken Wine of Cardui for about 15 years previous to her death. She thought she had ovarian neuralgia. She died at the age of about 60. He described the case of two Miss B——'s who were suffering from hookworm, anemia and suppressed menstruation; that they took Wine of Cardui during the year in which the witness knew them. He treated them with thymol and with a pill which consists of iron and nux vomica and strychnin and arsenic. The patients recovered and are now in good health.

Q.—Do you know of any cases where people have taken Wine of Cardui as a beverage? *A.*—I know of two cases that I can specifically state or specify. I know of, or I have seen several, but I don't care to go into details, only for the two that I know about absolutely.

Q.—Tell us about those two. *A.*—One is the case of Mr. P. L. B. He had formed the liquor habit.

Mr. Hough:—What is the name? *A.*—P. L. B.

Q.—What is his full name? *A.*—I will give it to you in confidence.

Mr. Sizer:—He will give you them in confidence.

Mr. Hough:—That is not a matter to conceal.

The Witness:—Yes, I consider it such.

Mr. Hough:—Was he a patient of yours?

The Witness:—Can't I give him these names in confidence, your Honor? Yes, he is a patient of mine.

THE COURT:—It seems to me that where the witness presents himself, and is willing to give the last name, and let the defendant have the benefit of that, that certainly he cannot plead any privilege to give the balance of the man's name—or to endeavor to keep the balance of the man's name away from the plaintiffs.

Mr. Sizer:—He has not given the full name, but he says that he will give the name to counsel. He says he is a patient of his, and he does not want to give his name.

THE COURT:—I see no objection to that.

Mr. Sizer:—We do not propose to hold it away from counsel at all.

THE COURT:—That is all right.

The Witness:—This young man had acquired or contracted the whiskey habit, and I have seen him on several occasions take a bottle of Wine of Cardui, off of the shelf in his drug store (he was a druggist) and drink anywhere from one third to half of it and a few hours later finish it up. The next case is Mr. J. M. H., who is a patient of mine with practically the same conditions, only he is not a druggist. I have seen him, on his terrific sprees, when he could not get whiskey, drink Wine of Cardui.

Mr. Sizer: Q.—Well, how much would he drink at a time? A.—Well, I could not be absolutely positive about how much, but anywhere between a third and a half of a bottle at a drink.

Q.—In addition to these two specific cases, have you seen others drink Wine of Cardui as a beverage, whose names you do not now recall? A.—Why, as I started to say in the beginning of my testimony, I have seen these young women at the cotton mills, come in from their work and drink Wine of Cardui.

Q.—Do you mean they would just drink it as a beverage? A.—I don't know. Some of them claimed that they drank it because it stimulates them up.

Mr. Walker:—I don't think that is competent, and I move that be stricken out.

THE COURT:—Strike it out.

To which ruling of the Court the defendants, etc., excepted.

CROSS-EXAMINATION BY MR. HOUGH

On cross-examination, the witness testified that he is city physician and that he has been Chairman of the Board of Health of his city for two or three years. He is a member of the South Carolina Medical Association and Ex-President of the County Medical Association.

He was asked:

Q.—You could be a member of the AMERICAN MEDICAL ASSOCIATION, by just subscribing for THE JOURNAL? A.—Yes, sir, but I prefer other journals, there are other journals I like better.

Q.—You say you prefer other journals? A.—Yes, sir.

Q.—What other journals? A.—I prefer the *New York Medical Journal.*

Q.—Is that the only one? A.—I take *Roentgen Rays Journal,* and the *American Journal of Roentgenology.*

The witness was asked to identify certain letters, one said to be an appeal from Dr. Heizer sent out to physicians to help the AMERICAN MEDICAL ASSOCIATION in this matter. He testified that he had received a letter from Dr. Haines, secretary of the South Carolina State Medical Association. He was unable to identify the letter said to be from Dr. Heizer requesting a meeting in Columbia, South Carolina.

He was asked:

Q.—Did he retain you to help in this case, against the AMERICAN MEDICAL ASSOCIATION, for the AMERICAN MEDICAL ASSOCIATION? A.—Well, I don't know; I could not answer the question as you put it, for I am—I don't know whether you mean "retain" as a physician, or as an attorney or what you do mean.

Q.—To assist in collecting evidence? A.—Yes. Not in collecting evidence, you understand.

Q.—Well, you advertised and offered $5 for— A.—He asked me to get—.

Q.—Let me finish the question. You advertised and offered $5 for a copy of the Home Treatment Book of 1912? A.—Yes, sir, and I got it.

Q.—We would have given it to you for less? A.—You did not offer that in your communication. You said you would sell all I wanted, sell me all I wanted at $5, but I had done got it.

Q.—Well, now, you then started out to collect evidence to help him? A.—In that case, yes, sir, in that specific case.

Q.—What was that date? A.—I beg pardon.

Q.—What was the date? A.—The day?

Q.—Yes? A.—I don't remember. Oh, you mean in Columbia?

Q.—Yes? A.—December 7th, I believe.

Q.—What year. A.—1915.

Q.—Doctor, where were these girls that were working in the cotton mill, at the time you saw them take Wine of Cardui? A.—Here are the names, Miss S——, Miss C——, Miss S——, Miss L——, and Mrs. C——. The first four named were at Concord, North Carolina. I practiced medicine there for a short time.

Q.—Where was the cotton mill? A.—It was in the city limits at Concord; I don't just remember what part of the city that is.

Q.—Did those girls live in the mill, or live at home? A.—They lived at home, and worked in the mill.

Q.—You followed each one of them home and saw them take Wine of Cardui? A.—No, sir, I did not follow them home. I was treating members of the different families, different members of the families.

Q.—How many evenings did you see them at their homes, as soon as they got out of the cotton mill? A.—I don't remember just how many times. That was back in 1895, and that has been nearly 20 years ago, quite 20.

Q.—You say you were not treating any of the girls at that time? A.—No, sir, not at that time. I was treating members of their families.

Q.—How many times did you see the girls take doses of Cardui? A.—I could not be absolutely sure about how many times, sir.

Q.—Are those girls and their families living down there now? A.—I do not know, sir, it has been about 21 or 20 years ago.

Q.—Since you have seen any of them? A.—Yes, sir.

Q.—Were you at the time treating any of these girls who were taking Cardui? A.—No, I was treating members of their families. They had a sick baby there.

Q.—Did you at any time recommend or give Wine of Cardui to any of your patients? A.—Not to my knowledge.

Q.—Didn't you tell some of your patients, that Cardui was probably a good thing for some conditions? A.—No, sir.

Q.—You never told any of them that? A.—No, sir. One of your representatives came to me several months ago, and wanted me to make a statement about how good it was, but I refused to do it.

Q.—Haven't you stated that you have prescribed it? A.—No, sir.

Q.—Or recommended it? A.—No, sir.

Q.—Or had permitted your patients to use it? A.—My patients some of them have used it without my permission?

Q.—But with your knowledge? A.—I have never advised any patient to use Wine of Cardui that I remember of.

Q.—Now, the first girl—did she state what her trouble was. A.—As I said in the beginning of my statement, they claimed that it was for a stimulant and for supposed female trouble.

Q.—Well, I mean was the first girl taking it for amenorrhea, or suppressed menstruation, or was she taking it for flooding? A.—I don't remember. I could not specify which girl was which at that time, for this thing has been quite a while ago.

Q.—Do you know whether the condition for which that first girl took Wine of Cardui, changed that any time after she took it? A.—No, sir, I don't remember it.

Q.—Do you know what the condition of the second girl was for which she took Wine of Cardui? A.—I don't know what the final outcome was in any of these four or five girls. There is one, Mrs. C——, I know the final outcome of that.

Q.—Is she one of the four or five girls? A.—She is one of the five or six, yes, sir.

Q.—Outside of Mrs. C——.

Mr. Sizer:—I would like to know, as a matter of information, are you referring to the specific cases you described? A.—I am referring to those women, that I saw come in from their work and take Wine of Cardui.

Mr. Hough:—The cotton mill girls? A.—Yes, sir. This Mrs. C——, she died in 1908 of tuberculosis.

Q.—She is dead? A.—Yes, sir.

Q.—And the woman that you operated on, is also dead? A.—One of them is, the other is not.

Q.—The other was recently operated on? A.—Yes, sir.

Q.—She is still living? A.—She is still living, and her home is in Danville, Virginia.

Q.—While we are on that point, what did you say she was operated on for? A.—She had profuse menstruation, and retroversion of the uterus.

Q.—But what was she operated on for? A.—I curetted her to stop the flow of blood, the profuse menstruation. The reason why I did not operate, that is, do a fixation, or a suspension, is that these pellagra cases—I have never had one of them that—but what the recovery was rather stormy.

Q.—Was rather what? A.—They don't heal well.

Q.—You mean when they have been operated on? A.—Yes, sir, so I make it a rule, unless it is very necessary, to keep out of their abdomens.

Q.—Do you mean then, that she was operated on for pellagra? A.—No, I did not say she was operated on. I told you I curetted her for the flow of blood, the profuse menstruation.

Q.—Was that all that was done to her? A.—I gave her the X-Ray treatment to bring about the menopause.

Q.—And then what did you give her? A.—I put her on Blaud's pills with iron and arsenic.

Q.—How much alcohol was in that? A.—None that I know of, sir.

Q.—Not any? What other tonics did you give her? A.—That is all.

Q.—You spoke of some general tonics? A.—That is a general tonic, sir.

Q.—You did not use any other than those Blaud's pills? A.—No, sir.

The witness was then asked further questions concerning the case of Mrs. J. M. R., his sister, who was operated on by Dr. Howard Kelly and questions covering the history of this case, especially relating to her various menstrual periods, questions going over this ground repeatedly.

He was then asked:

Q.—What did she take Wine of Cardui for, after the birth of her second child? A.—For this deranged menstruation.

Q.—For the suppressed menstruation? A.—For the deranged menstruation.

Q.—Would you say it was suppressed? A.—Well, the menstruation after the birth of the second child was not suppressed so much. It was more profuse menstruation.

Q.—When did the menstruation come on first after the— A.—I do not know, sir.

Q.—Do you know whether, when it first came on, it was scanty or profuse? A.—As I have said before, I did not treat her after—very much, after the birth of this second child, while I have seen her, of course, quite frequently; but I have not been their regular family physician. It is about 25 or 30 miles, possibly from there, and I have been—I have not been in touch with them all the time.

Q.—Now, during all this period, did you do anything, to prevent her taking Wine of Cardui? A.—I told her that she would not get any good out of it, or at least, that I had never seen any good come from it.

Q.—When did you first tell her that? A.—I don't remember. I have told her that on several occasions.

Q.—When was the first time you told her that? *A.*—I do not know, sir.

Q.—Before or after the birth of the second child? *A.*—I will not attempt to say, sir.

Q.—Well, how long after the birth of the second child was it that your sister's menstruation became anywhere near regular? *A.*—I really do not know, sir. I could not be—I would not attempt to be positive about those things.

Q.—When was she operated on? *A.*—She was operated on in 1914, July—if I remember correctly, about between the 1st and the 4th.

Q.—And you were her physician then? *A.*—I went with her, I carried her up to Dr. Kelly's. No, Dr. Richardson was her physician at that time.

Q.—When did you first call to see her as a physician, with reference to that condition? *A.*—Oh, I have seen her at intervals every two or three months, for quite a long time. You might say, the whole 20 years

Q.—Do you mean in 1914, and 1913? *A.*—No, sir. I had seen her at several intervals during that time.

Q.—During 1913, how was her menstruation? *A.*—Her menstruation had been very much deranged all this time from the birth of the last child.

Q.—For how many periods after the birth of the second child did she take Wine of Cardui? *A.*—I do not remember, sir. I have answered that before.

Q.—That you don't remember. When did she stop taking Wine of Cardui? *A.*—She has not taken any to my knowledge since she was operated on.

Q.—Before she was operated on, she stopped, didn't she? *A.*—Not that I know of, no sir.

Q.—When was the last time that she took any, that you know of. *A.*—She told me that she had been taking Wine of Cardui, regularly, for the past several years. That was in going—on the train going up to Baltimore.

Q.—Did she say what effect it had had on her? *A.*—No, I don't know as she expressed herself as to that.

Q.—Didn't she indicate to you that it had been helpful? *A.*—No, sir, she didn't indicate one way or another, if I remember right, sir. I know that it had not been from my personal knowledge.

Q.—You advised the operation, did you? *A.*—Yes, sir.

Q.—How has her menstruation been since? *A.*—She has not menstruated since, that I know of. It is just possible that she might menstruate some, but if she has I do not know it. As a rule, with that operation the menstruation is practically nil.

Q.—You prescribe viburnum in your practice, don't you?

Mr. Sizer:—That is objected to. That is not cross-examination of anything we have asked this witness.

THE COURT:—I don't recall anything of that kind, in the direct at all.

Mr. Hough:—He spoke of tonics.

THE COURT:—He gave just one, and that was a pill.

Mr. Hough. Q.—Is that the only tonic you have ever prescribed?

Mr. Sizer:—That is objected to.

THE COURT:—He told what he prescribed in specific cases. He has not testified as an expert; he has testified as to facts. We are not interested in what he prescribed in other cases.

To which ruling of the Court the plaintiffs, etc., excepted.

Mr. Hough: Q.—These women in the cotton mills—I think I failed to ask you that—that you saw taking Wine of Cardui, were taking it in medicinal doses, were they not? *A.*—I could not say, sir, whether they were or not. They were drinking it out of the bottle. I don't know whether they would take teaspoonful, tablespoonful or half a pint.

Q.—How many times did you say you saw them do that? *A.*—I would not attempt to name the distinct number of times, but I have seen it frequently.

Q.—Will hookworm derange menstruation? *A.*—Yes, sir.

Q.—Will pellagra derange menstruation? *A.*—Yes, sir.

Q.—Now there were two people, as I recall—if I am mistaken, please correct me— *A.*—Yes, sir.

Q.—that you say you had seen take Wine of Cardui as a beverage? *A.*—Two men.

Q.—Two men? *A.*—Yes, sir.

Q.—One was a druggist? *A.*—Yes, sir. He is dead. He died from alcoholic neuritis.

Q.—When did he die? *A.*—I don't know whether I have that date on here (referring to memorandum). It has been some four or five years ago. I have not the date here, but it has been quite a little while ago.

Q.—He drank whiskey, did he? *A.*—Yes, sir.

Q.—And then when he could not get anything else, you say he drank Cardui? *A.*—Yes, sir.

Q.—Then would he stop for a while? *A.*—The poor fellow, sir, when he began to—when he acquired the liquor habit, he just continued until he died. That is all there is to it. It took about—he went out inside of two years.

Q.—How about the other case? *A.*—He is living yet.

Q.—Do you mean that he never sobered up at any time? *A.*—Well, possibly, I could not say that I have never seen him sober. I treated him for quite a good while.

Q.—Did you have an office in his drug store? *A.*—No, my office was not in his drug store, but a lot of my calls went into this drug store.

Q.—Were you interested in the drug store? *A.*—No, sir, I have no finances in it whatever.

Q.—Have you ever been interested in a drug store? *A.*—No, sir.

Q.—Then you don't know whether he sobered up after drinking Cardui or not? *A.*—I say I have never seen him—I cannot recall the fact of ever seeing him sober, after he had taken to drinking whiskey.

Q.—Now, the second case? *A.*—He is living yet. He is a dope fiend now.

Q.—What do you mean by dope fiend? *A.*—He uses morphin when he can get it.

Q.—Morphin? *A.*—Morphin.

Q.—Cocain? *A.*—No, not to my knowledge.

Q.—Just morphin? *A.*—Morphin, and drinks all the whiskey he can get.

Q.—When you say "whiskey" you mean whiskey as whiskey, do you? *A.*—Yes, and if he cannot get whiskey, he will drink something else, Wine of Cardui, for instance. I have seen him drink Wine of Cardui.

Q.—Anything else? *A.*—I have seen him take Suncholaria Mixture, which is an opiate.

Q.—Anything else? *A.*—I believe that is all.

Q.—Did he have a drug store? *A.*—No, sir.

Q.—Never had any interest in a drug store? *A.*—No, sir; not to my knowledge.

Q.—Did he ever sober up at any time after he commenced to drink? *A.*—Yes, he was a periodical drinker, what you might term as a periodical drinker.

Q.—He would start out on whiskey, and then when he would get drunk, he would drink anything? *A.*—He would start out on whiskey, and I might say that when he would get drunk and run out of whiskey, he would drink anything he would get, and I have seen him drink Wine of Cardui and this Suncholaria Mixture, which is an opiate.

Q.—You will give us those names, will you? (Referring to the names of patients heretofore indicated by initials only). *A.*—Yes, sir.

Mr. Hough:—And the addresses, that's all.

REDIRECT EXAMINATION BY MR. SIZER

Redirect examination gave emphasis on the points brought out in the cross-examination; the witness testified that his sister has not the alcoholic habit.

TESTIMONY OF MR. GEORGE R. M'COY

Mr. George R. McCoy was called as witness for the defendants.

DIRECT EXAMINATION BY MR. SIZER

Mr. George R. McCoy is a traveling salesman residing in St. Charles, S. C. He was asked questions concerning his knowledge of the use of Wine of Cardui as a beverage. Objection was made and overruled. The court stating:

THE COURT:—We want what you know of your own personal knowledge, what you have seen. I think it is better for him to detail specific instances rather than to try to generalize on this proposition. I do not think it is right.

Mr. Sizer: Q.—I will ask you to state to the Court and jury any specific instance you now recall illustrating the use of Wine of Cardui for a beverage.

THE COURT:—Give the dates and names and places.

A.—I saw a nigger drinking it in my store.

Mr. Sizer: Q.—When was that? *A.*—That was about 1908.

Q.—In your store? *A.*—Yes.

Q.—How much of it did he drink? *A.*—He drank a bottle.

Q.—What was the effect on him? *A.*—Why, he became drunk.

Q.—Do you know what that man's name was? *A.*—His name was Bill P——. He was a brick maker and he was working for me at the time.

Q.—Well, any other case? *A.*—Dow H——, he was the agent up there and was a merchant. He drank it. Everybody knew it.

Mr. Walker:—I move to strike that out.

THE COURT:—Strike it out.

To which ruling of the Court the defendants, etc., excepted.

Mr. Sizer: Q.—Did you see him drink it? *A.*—Yes, sir.

Q.—How much did you see him drink? *A.*—I saw him drink a couple of bottles I guess.

Q.—At one time, you mean? *A.*—No, I saw him drink it at three different times.

Q.—How much did he drink each time? *A.*—He drank about half a bottle the first time I saw him drink it.

Q.—What did you say his name was, H——? *A.*—Dow H——.

Q.—What business is he engaged in? *A.*—He was railroad agent there, but he was then a merchant. He had lost his job with the railroad and he was in the mercantile business.

Q.—When was that that you saw him drink it? *A.*—That was about 1912, in August as well as I remember, it was in August, 1912.

Q.—Well, any other instances that you recall. *A.*—What is that?

Q.—Do you recall any other instances of the use of Wine of Cardui, as a beverage? *A.*—Why those are the only two that I saw drink it. It is perfectly known though—

Mr. Walker:—I object to that and move to strike it out.

THE COURT:—Yes, strike it out.

To which ruling of the Court the defendants, etc., excepted.

CROSS-EXAMINATION BY MR. WALKER

On cross-examination the witness was asked concerning the population of St. Charles and the surrounding territory.

He testified that he saw the negro P—— drink Wine of Cardui in his store. He last heard of P—— in 1908. In the store Mr. McCoy carried Wine of Cardui in stock. The Wine of Cardui was purchased from jobbers, traveling salesmen, and directly from the Chattanooga Medicine Co. They were in business eight years, retiring in 1908. They would sell perhaps six gross per year of Wine of Cardui. He was asked concerning P——:

Q.—Was he sober when he came into your place? *A.*—Yes, sir; he came in from his work.

Q.—And he bought one bottle of Cardui? *A.*—Yes, sir.

Q.—Was he a drinking nigger? *A.*—Yes, sir; he was.

Q.—A fellow that was in the habit of getting drunk? *A.*—He was so reported to me; yes, sir.

Q.—As you know him? *A.*—Sir? It was reported to me, I don't know.

Q.—He was a whiskey or alcohol drinker, was he? *A.*—Yes, sir.

Q.—And he got drunk on one bottle right there at your place? *A.*—Yes, sir.

Q.—This man drank one bottle and he became drunk over it? *A.*—He drank that one bottle—in other stores they handle this Wine of Cardui. I saw him drink this one bottle.

Q.—You saw him drink one bottle? *A.*—He left my store to go to his work, he was drunk.

Q.—Was he sober when he came in? *A.*—Practically sober, sir.

Q.—What do you mean by practically sober? *A.*—If he was drinking I could not tell it.

Q.—Did you make any investigation of him so as to ascertain whether he was drinking or not? *A.*—None whatever, sir.

Q.—Do you mean that he was a man that one bottle of Cardui would get drunk? This whiskey drinking nigger? *A.*—That was my experience with it, sir.

Q.—You think he was sober when he came in, and one bottle made him drunk? A.—So far as I know, he was sober; I could not say positively.

Q.—You don't know what he was drinking before he came in? *A.*—I do not. I could not detect that he had been drinking.

Q.—The other man that you named was Dow H——? *A.*—Yes, sir.

Q.—How do you spell it? *A.*—H——.

Q.—Where does he live? *A.*—Why, he lived at St. Charles then.

Q.—When did you last see him? *A.*—I saw him about two years ago.

Q.—Where? *A.*—He is on the bum.

Q.—Where? *A.*—I do not know where he is now.

Q.—Where did you see him two years ago? *A.*—I saw him at Columbia, in Columbia, drunk.

Q.—Where was he living then? Where was he living, as you understood it? *A.*—Why, he told me that he was living at Summerton, South Carolina.

Q.—How do you spell that? *A.*—S-u-m-m-e-r-t-o-n.

Q.—You have never seen him then in two years since that time? *A.*—Yes, sir; since that time.

Q.—Well, have you seen him since that time? *A.*—No, sir; I have not.

Q.—You saw him drinking Cardui you say, twice? *A.*—Yes, sir.

Q.—Where did he get it? *A.*—I went in the store and he was there, he was drunk, lying on this floor, on the floor in the office. He had fallen out of his chair evidently, and he had a bottle of this Wine of Cardui between his legs; kind of lying down and when I got in he raised up.

Q.—In whose store? *A.*—In his store.

Q.—Oh, he had a store? *A.*—Yes, sir; I told you he was in the mercantile business.

Q.—What was his business? *A.*—What?

Q.—What was his business? *A.*—I told you he was a merchant.

Q.—Did he have a general store? *A.*—Yes, he carried Wine of Cardui, too.

Q.—And he was on the floor with a bottle of Wine of Cardui? *A.*—Yes, sir; and there was eight bottles that we counted on the floor, empty bottles.

Q.—Alongside of him? *A.*—Empty bottles, yes, sir; and those wrappers around all scattered over the floor.

Q.—Empty bottles? *A.*—And the cartons were all torn up, and on the floor there was eight bottles.

Q.—And one between his legs made nine? *A.*—How is that?

Q.—And one between his legs made nine? *A.*—No, sir; that was in the amount we counted, eight.

Q.—He was full? *A.*—Sir?

Q.—He was lying on the floor drunk? *A.*—And the eight was full? No, they were empty.

Q.—How did he compare with his eight bottles with the nigger with one? *A.*—How is that?

Q.—How did he compare in drunkenness with the colored man with one? Was he worse, was he pificated? *A.*—Yes, sir; he was perfectly drunk.

Q.—And the cartons lying around him? *A.*—Yes, sir.

Q.—When did you see this Dow H—— other than that one time drunk again? *A.*—I saw him in the store again.

Q.—In his own store. *A.*—I was asked by his wife to go in there.

Q.—I did not ask you anything about what his wife asked you. When did you see him another time drinking Cardui? *A.*—Why, it was about— I think about a week from that time.

Q.—The same year? *A.*—Yes, sir; the same month.

Q.—And the same month? *A.*—Yes, sir.

Q.—Now, when you saw him drunk on the floor, were there any other people in the store, or was he alone? *A.*—His wife was with me.

Q.—Now, the second time you saw him, where did you see him the second time, in his own store? *A.*—That was in his store; yes, sir.

Q.—Was anybody there besides yourself then? *A.*—His wife was with me.

Q.—Now what condition was he in then? *A.*—He was drunk.

Q.—How many bottles were lying around him at that time? *A.*—Why there was— I think there was about three empty bottles.

Q.—Was there any between his legs at that time? *A.*—No, sir.

Q.—Three. Was he lying on the floor? *A.*—There was a bottle open that stood right behind a post in his office.

Q.—That made four? *A.*—Yes, sir.

Q.—Was he sitting down or lying down or what? *A.*—Why, he was sitting in his chair.

Q.—He was sitting up? *A.*—Leaning back in his chair.

Q.—Did you see him drink any Cardui yourself, at any other time? *A.*—Yes, sir.

Q.—You saw him? Which time was it? *A.*—I saw him at three different times drinking some.

Q.—Are either of those the two times, one when the eight bottles were around him, and one when the four were there? Did you see him drink them? *A.*—Yes, sir; I saw him drink it. He got it out of his waste basket.

Q.—Was that the time he was lying on the floor? *A.*—No, sir; that was the time he was sitting in his chair. That was the time there was three empty bottles lying on the floor.

Q.—When else? *A.*—I saw him go to his carriage house one Sunday morning. We were watching him. Someone said that he was going to get on a jag and I walked behind him and he went in his carriage house and he went to his buggy and pulled out a bottle of this stuff from under his buggy seat and he pulled the cork and downed the whole bottle. He went from there to his barn, and he went in his barn and he was taken out that night. I don't know whether he drank any more during the day or not, but he was taken out that night and he was drunk. He had to be carried to his house.

Q.—Did you see him drink it at any other time? *A.*—No, sir; that was the last time I paid any attention to him at all.

Q.—That was in 1912? *A.*—That was in 1912; yes, sir.

The witness was asked who accompanied him to Chicago, and if he knew Dr. Heizer. He was asked the names of the jobbers from whom he had purchased Wine of Cardui. He testified that he could easily identify bottles of Wine of Cardui. In the store which he conducted castor oil, turpentine and similar drugs as well as lemon extract, orange extract, lemon and vanilla flavoring were carried in stock. The witness had never had any difficulty with the Chattanooga Medicine Co. because of bills.

REDIRECT EXAMINATION BY MR. SIZER

Q.—Mr. McCoy, is there any similarity between the cartons in which lemon extract is sold, and those in which Wine of Cardui is sold? *A.*—Why not that I noticed. I have never seen any.

Q.—What is the size of the carton in which lemon extract is sold? *A.*—Why it is sold in two different sizes in cartons. It is about, I think, four inches and about five inches and six inches. There are five and ten and twenty-five cent bottles of that extract put up. It is nothing like as large.

Q.—Nothing like as large as Wine of Cardui? *A.*—No, sir.

Q.—Did you see any lemon extract or vanilla extract cartons lying around this man? *A.*—No, sir.

Q.—They were all Wine of Cardui? *A.*—Yes, sir.

Q.—I believe you say this town of St. Charles has about 700 inhabitants? *A.*—I think so, about 700 as well as I can say.

Q.—About how many stores are there there that handle Wine of Cardui? *A.*—There was five at that time.

Q.—That handled Wine of Cardui? *A.*—Yes, sir. He was included in this five.

Q.—They all sold about the same amount that you sold?

Mr. Walker:—That is objected to.

THE COURT:—Objection sustained.

To which ruling of the Court the defendants, etc., excepted.

The Witness:—It is a good seller.

Mr. Walker:—I move that be stricken out.

THE COURT:—That is already in the record. You can strike it out this time.

Mr. Walker:—I make that motion because the witness stated it over your Honor's ruling, and over an objection.

THE COURT:—It may go out.

The further hearing of the cause was adjourned until 2 o'clock the same day, April 5, 1916.

April 5, Afternoon

The court met pursuant to recess.

Mr. T. J. Scofield:—If the court please, I now offer to read in evidence "Home Treatment for Women. Published for the private information of women who suffer from female diseases," as published by Chattanooga Medicine Company in the year 1912.

THE COURT:—Are you offering the whole pamphlet?

Mr. T. J. Scofield:—No. There are a lot of testimonials and things of that kind that we are passing over.

THE COURT:—Well, you are offering the pamphlet, I presume, and will read such portions as you see fit?

Mr. T. J. Scofield:—Yes.

THE COURT:—And of course the other side may read the balance if they want to.

Mr. T. J. Scofield:—Excepting that I do not wish it to be understood that we are offering any testimonials.

THE COURT:—Well, you are not bound by the testimonials of course. They are a part of the literature.

Mr. T. J. Scofield:—Yes.

Mr. Hough:—Well, the book is offered in evidence, and he is reading what he pleases, and we will read what we please.

THE COURT:—Exactly.

Mr. T. J. Scofield then read the record extracts from the "CARDUI HOME TREATMENT FOR WEAK, SICK, WOMEN." This reading was continued during the afternoon ending with page 55 of the "home treatment" book.

Further hearing of the cause was then adjourned until April 6.

April 6, 1916, Morning

The court met pursuant to adjournment.

Mr. T. J. Scofield offered in evidence Defendant's Exhibit 64, the Home Treatment Book for Women, copyrighted in 1913, and read to the jury the changes from the previous edition. He also offered in evidence the book for 1914. In the 1914 edition certain matter had been eliminated. Mr. T. J. Scofield offered in evidence the photographs of the advertising bill boards of the Chattanooga Medicine Company. Argument was made regarding the introduction of exhibits of an earlier date than the first article published in the journal; the court finally ruling that the defendants were entitled to put all such matter in, the plaintiffs excepting to Court's decision.

Mr. Scofield read into evidence advertisements from the *New Orleans Picayune* of Jan. 22, 1906, Feb. 1, 1906, Feb. 5, 1906, Jan. 18, 1906. Mr. Scofield read, after objection which was overruled, from the Ladies' Birthday Almanac, 1907. He next read from the Ladies' Birthday Almanac of 1908, 1909, 1910 and 1911.

The further hearing of the case was then adjourned to 2 o'clock of the same day.

April 6, 1916, Afternoon

The Court met pursuant to adjournment. Mr. T. J. Scofield continued to read the Ladies' Birthday Almanac of 1911, 1912, 1913, 1914, 1915.

Mr. T. J. Scofield said:

Mr. T. J. Scofield:—I read from "CARDUI SONG BOOK, No. 4; copyrighted in 1908 by the Chattanooga Medicine Company, Chattanooga, Tenn." Page 2. "Cardui for women"—

Mr. Hough:—One minute. Is the whole book offered in evidence? I would like to know.

Mr. T. J. Scofield:—I had not said so.

THE COURT:—I undertake to say Mr. Scofield is not going to give us the music.

Mr. Walker:—Well, I don't know.

Mr. T. J. Scofield:—I will alternate with Mr. Walker. I will sing one song, and he can sing the other.

Mr. Walker:—I can only whistle.

Mr. T. J. Scofield:—No; I am not offering the whole book in evidence. I am doing as I have with the others. I am reading what I think is appropriate and proper. I will try and sing the songs, if you think you can stand it and the Court will permit it. "Cardui for women. Nearly all the many disorders which attack women can be relieved or cured by the use of Wine of Cardui. It acts upon the womanly organs in a gentle, natural way. It is pure, free from mineral ingredients, nonintoxicating and perfectly harmless. Recommended for young or old. Sold everywhere."

The first page of the book:

"The Cardui Song Book. Published by the Chattanooga Medicine Company, Chattanooga, Tenn. INDEX TO CONTENTS: Religious:

"Abide with Me; Am I a Soldier of The Cross; From Greenland's Icy Mountains; Nearer My God to Thee; Oh for a Thousand Tongues; Onward Christian Soldier; Where He Leads Me."

Mark that Defendants' Exhibit —

Mr. Hough:—That is objected to, of course.

THE COURT:—I cannot see the pertinence of the index, Mr. Scofield.

Mr. Loesch:—If the Court please, I would like to show the Court the pertinence of it. In the declaration, the first count of the declaration, the complainant—the plaintiff says, or alleges, as part of the libelous matter—there is this allegation of the plaintiff: "By far the most important of these positions is the Chairmanship of the Book Committee. According to the Methodist Year Book, the Book Committee is one of the most important bodies created by the General Conference, being almost a general conference, ad interim."

They further charge as libelous: "Does the Chairman of the Book Committee of the Methodist Episcopal Church, who is such a strong advocate of temperance, really believe, etc." Then in another charge: "By what sophistries does Mr. Patten, a pillar of the Methodist Episcopal Church, square his religious principles with his business?"

Now, that is one of the sophistries, Your Honor. More than that in the second count of the declaration we have this: "As has been said before, however, the alcoholic content of Wine of Cardui is but a minor indictment against the product. The basic objection to it is that the business has been built on deceit; that its sale is a wicked and vicious fraud perpetrated on ailing women."

A religious song on the right hand side and an advertisement of Cardui on the left side—

Mr. Walker:—Are you reading from the article now?

Mr. Loesch:—I am reading from your charge in the second count.

Mr. Walker:—When did we say a religious thing on one side and something else on the other?

Mr. Loesch:—I say you publish on the right hand side of this song book a religious hymn to stir the woman's soul to its depths, and on the left side you shove in the question of Cardui. "Won't you take Cardui?"

Mr. Walker:—Well, whatever that is, I take an exception to it.

Mr. Loesch:—I think that is perfectly proper. As I say—

THE COURT:—What is your objection?

Mr. Walker:—Whatever that was in his remarks, whether it is an argument, or what it is, I object to it.

THE COURT:—If you will be good enough to state specifically what the objection is, the Court will rule on it.

Mr. Walker:—I take exception to the comments of counsel, as totally unjustified by the objection, and done with a purpose of prejudice.

THE COURT:—The jury will understand clearly that the argument of counsel during the trial does not furnish you with any evidence in the case. You may disregard entirely anything that Mr. Loesch has said in this argument, up to the present time. It is not evidence, and is not to be considered by you in reaching a conclusion on any disputed question of fact. He was addressing himself solely to the Court on a point of law; and Mr. Walker's exception is well taken, and you will not consider it.

Mr. Walker:—Now, your Honor, we object to the reading of this list of songs, as wholly immaterial.

THE COURT:—The objection will be overruled, and exception.

To which ruling of the court the plaintiffs, etc., excepted.

Mr. T. J. Scofield:—Will you mark that defendants' Exhibit 72?

Mr. Scofield also desired to introduce the "Cardui Calendar and Weather Chart," but objection was made and sustained.

TESTIMONY OF PROF. ALBERT P. MATHEWS

Prof. Albert P. Mathews was called as a witness for the defendants.

Prof. Albert P. Mathews resides in Chicago; he is professor of Physiological Chemistry in the University of Chicago and Rush Medical College. He has been a student at various universities in this country and in England and in Germany; he has been an instructor at the Harvard Medical School and in the University of Chicago.

He had made about thirty different experiments with Wine of Cardui and viburnum prunifolium.

Argument was made as to whether the witness was testifying as an expert or as to fact. He had been offered by the defendant as a witness as to fact.

The witness showed to the jury the apparatus with which the experiments had been performed, the witness saying:

The Witness:—I have tried two different series of experiments; the first were tried on the uterus taken out of the body; and the other series of experiments were tried on the uterus when it was in the body and in its normal position, with its nerve supply and blood supply intact. I will speak first of the experiments which were tried on the uterus when it is taken out of the body. The uterus, you know, is a muscular organ with a cavity inside in which the young develop, and that cavity is lined with a soft membrane.

Mr. Walker:—Well, I don't think we ought to have a lecture in anatomy.

THE COURT:—Oh, I think that is not involved here; and besides, I think that has largely been described to the jury in some of the literature that has been read.

Mr. Walker:—He is not an expert, anyway.

Mr. T. J. Scofield:—If the Court please, I do not understand whether the Court sustained the objection.

THE COURT:—I think we are going a little too far afield. We want to know exactly what Professor Mathews did.

Mr. T. J. Scofield:—That is what he is going to explain.

Mr. Walker:—No, as an expert he is describing the uterus, telling what it is.

Mr. T. J. Scofield:—Absolutely not. I suppose he is leading up to tell about taking the strips of the uterus and experimenting with them.

THE COURT:—He may tell that.

The Witness:—I have taken the uterus—the uterus, as you know—

Mr. Hough:—Will the witness sit down please?

The Witness:—I wanted to be here, just to illustrate that—certainly.

Mr. Walker:—We have no objection to the illustration, but you can sit down.

The Witness:—Is there any objection to a man standing when he testifies?

Mr. Walker:—We are making it, Professor—there is objection, when we make it.

Mr. Loesch:—Suppose you put it over here (moving apparatus in front of the witness stand).

The Witness:—I did not think there was any objection—

Mr. Walker:—We are not on the Midway now, any of us, Professor. We are not near the University. We are right here and we will be here a little time, Doctor.

The Witness:—Is that to imply that I am—

Mr. T. J. Scofield:—I object to these remarks—

Mr. Walker:—I object to the Doctor telling me when I make an objection that it is not proper or saying—

THE COURT:—I will just emphasize to the jury the fact that these petty little differences between the counsel do not constitute evidence in the case.

Mr. Hough:—I suggest that counsel ask the witness questions, and let the witness answer them.

THE COURT:—Yes.

Mr. T. J. Scofield: Q.—Doctor, will you describe the experiment, as you conducted it?

THE COURT:—The first one.

The Witness:—The experiments consisted in taking the uteri out of various animals—I used cats, dogs, some rabbits and guinea pigs. I used both pregnant and non-pregnant uteri. The uterus was taken out, and a strip of it was taken and placed in a salt solution in this vessel here (indicating apparatus), and attached at this end, as you see, and at the other end to this lever. This rubber here corresponds to the strip of the uterus muscle. When this contracts, it pulls your lever down like that (indicating on apparatus). This writes against a drum in this way, which turns around—this is the revolving drum—and as it writes, it traces a record, so that the uterus records its own contractions.

A stream of oxygen is kept going through here, so as to give the uterus strip air.

Now, under those circumstances, the strip begins to contract, and, as I say, it records its contractions on the drum.

Now, while it is contracting, one adds to the salt solution here Wine of Cardui, or any drug that you wish to test—

THE COURT:—No, no; tell just what you did with this particular experiment.

The Witness:—I added to this salt solution Wine of Cardui, in one case—in various doses, in different experiments—and viburnum prunifolium extract in the other experiments, and observed to see whether there was any change in the contractions of that strip produced by either Wine of Cardui or by viburnum prunifolium; and there was no change in the contractions produced with either of these drugs, either Wine of Cardui or an extract of viburnum prunifolium; they were entirely inactive.

Mr. T. J. Scofield:—Now, Doctor, did you make a test with any other medicine? Anything else? *A*.—Yes; I—

Mr. Hough:—That is objected to as incompetent, irrelevant and immaterial.

THE COURT:—The objections seem to me to be well taken.

Mr. T. J. Scofield: *Q*.—Well, Your Honor, the object is to show whether or not contractions would be increased or diminished under other ingredients which might be put into the solution, to show—

THE COURT:—The question is what would be the effect of Wine of Cardui?

Mr. T. J. Scofield:—Very well; very well.

To which ruling of the Court the defendants, etc., excepted.

The Witness:—Shall I describe the other experiments?

Mr. T. J. Scofield:—No, no, don't describe anything further.

Q.—Now, did you make a record, Doctor, of such an experiment as you have described here? *A*.—Yes, sir; I have records of all my experiments.

Q.—Now, did you make any experiment with Wine of Cardui with the uterus in the body? *A*.—I did.

Q.—Describe that briefly? *A*.—In these experiments the uterus was attached. In these experiments I used mostly dogs, but also one or two cats. This end of the lever (indicating upon apparatus) was attached to the uterus in the body of the dog. The dog was immersed in a salt solution, except the head; the dog, of course, was anesthetized; and, under those circumstances, the uterus undergoes slow contractions, and when it is arranged this way it writes a record of its contractions on the drum.

Then I injected into the jugular vein of the dog a dose of Wine of Cardui. I injected in some experiments about what would be equivalent to about half a dose for a woman, into the vein. In other experiments I injected one dose or two doses, or even as many as three or four doses of Wine of Cardui—what would correspond in a woman to that amount, if she had taken that amount. There was no change produced in these normal contractions of the uterus, in those cases by the—following the injection of Wine of Cardui. The motions neither increased nor diminished as the—after the injection—beyond such temporary changes as you get from the act of putting a needle into the jugular vein

I also tried injecting the drug under the skin, and also putting it directly into the intestine. I put into the intestine of a dog a common tablespoonful of Wine of Cardui, or two tablespoonsful; and there was no change produced by that—and under the skin about half a tablespoonful; there was no change in the contractions following the injection of this—of the Wine of Cardui in these ways, either.

I tried similar experiments with the viburnum prunifolium, and I injected even larger—what would correspond to even larger doses, of viburnum prunifolium into the veins of dogs, and into the—and under the skin and into the intestines; and there was no change in the contractions of the uterus—the normal contractions—as a result of these injections, either.

Mr. T. J. Scofield:—Now, Doctor, did you use the Wine of Cardui—how did you use it, evaporate it, or use it as it comes in the bottle? *A*.—I tried it both ways. I tried the Wine of Cardui as it was; and in other experiments, I evaporated off the water and alcohol and used the residue of the Wine of Cardui.

Q.—Under these different conditions, will you state whether or not there was any change in the contraction of the uterus; and difference? *A*.—There was no difference.

Q.—Now, did you notice, did you observe or see whether or not there was any change in the color of the uterus, or whether or not it became congested after the administration of the Wine of Cardui, either in the vein or under the skin? *A*.—Yes, sir. I made careful observations on the color of the uterus, and that did not change.

Q.—Now, I understand you to say that you had also made experiments and observed the same on the uterus of pregnant animals; is that right? *A*.—Yes, sir.

Q.—Please tell us briefly about such experiments? *A*.—Well, they were similar to those I have already described; only in the case of pregnant animals the motions are a little more vigorous, and they increase, as in the course of an experiment the contractions get stronger and stronger as you go along.

THE COURT:—You are speaking now about what actually happened in the experiments you made?

The Witness:—Yes, sir; certainly.

THE COURT:—You are not speaking generally?

The Witness:—No; I am describing simply my own experiments. And there was no change in the force of the contractions following the injection of either Wine of Cardui or the residue of it, or viburnum prunifolium.

Q.—Could you, from what you could see of the uterus—when it was subjected to this treatment—was there, or did you observe whether or not there was any quieting effect produced upon the muscles of contraction? *A*.—There was no quieting effect whatever.

Q.—Now, have you noticed, or have you tried any experiments with Wine of Cardui as to the action of the drug on the intestines? *A*.—The intestines were exposed here, and I could observe whether the movements of the intestines were increased or diminished; or whether there was any congestion or any paling of the intestine, following the injection of the drug; and there was none whatever. The motions of the intestine continued just as they were before, so far as one could judge by looking at that, and the color of the intestine was not changed to indicate any congestion or any constriction of the blood vessels.

Q.—Did you observe any effect on the muscular or the nervous system, such as twitching or spasms, on the injection of the drug directly into the veins? *A*.—There was no change whatever. I might—I might have been injecting so much salt solution—inert solution of salt.

CROSS-EXAMINATION BY MR. HOUGH

Q.—Doctor, do you know of any other experiments which indicate that viburnum prunifolium does have action on the isolated uterus? A.—Personally, I do not.

Q.—Have you read of any? A.—I have not read of any?

Q.—What do you mean by saying personally you do not? A.—I mean I have not read of any myself. In talking the subject over, I have been told there were such observations.

Q.—And that it did have an action on the isolated uterus? A.—I don't know.

Q.—I say, that is what you were told? A.—I do not know what the circumstances were, of the experiment.

Q.—I say that with reference to the— A.—I do not know whether it was on the isolated uterus or the uterus in the body. I don't know anything about those experiments.

Q.—Well, it was either on the isolated uterus, or the uterus in the body, wasn't it—

Mr. T. J. Scofield:—What he may have been told—I do not think that would be material.

THE COURT:—I think this question has already been answered.

Mr. Hough: Q.—Did you read an article on the subject in the JOURNAL of the AMERICAN MEDICAL ASSOCIATION? A.—On the subject of what?

Q.—Of viburnum prunifolium having an action on the isolated uterus? A.—No, sir.

Q.—In any other medical literature? A.—No, sir.

Q.—Who was it told you?

Mr. T. J. Scofield:—That I object to, if the court please.

THE COURT:—What is the purpose of this?

Mr. Hough:—Just to show that his experiments did not amount to anything, because other experiments have been made which show—

THE COURT:—You may show those other experiments. The witness has told us what he did, and found out, and if you are satisfied with it as it is, leave it.

Mr. Hough:—I am satisfied with that. I will leave it. That is all.

TESTIMONY OF PROF. J. D. PILCHER

Prof. J. D. Pilcher was called as a witness for the defendants.

DIRECT EXAMINATION BY MR. T. J. SCOFIELD

Prof. J. D. Pilcher testified that he is Professor of Pharmacology in the State Medical College of Nebraska at Omaha. He was graduated from a university and secured a degree in medicine from the Western Reserve University in Cleveland. He spent two and a half years as an intern in the hospitals in Cleveland. He is a member of the Society for Experimental Pharmacology, and of the American Physiological Society. The witness testified as to fact, describing his experiments as follows:

A.—I made a large series of experiments on the uterus of the guinea-pig, both the pregnant and the virgin, taken from the body — I used the same method as Professor Matthews—taken from the body. I used first viburnum prunifolium, the bark of both the stem and the root, and carduus benedictus, and carduus marianus, and also sodium valerianate, and then later on I made some on Wine of Cardui. I found that using the solution of up to one to two hundred and fifty, that is, one part of the drug to 250 of the bath in which this little strip of muscle was contained, it did not in any way alter normal contractions of this strip of uterus. In other words, if I represent the contractions, going this way (indicating)—

Mr. Hough:—One minute. I object to that.

THE COURT:—Just tell what you found.

The Witness:—Yes, sir. Then I made a number of experiments in the same way, using Wine of Cardui. I used solutions of Wine of Cardui of from 1 to 1,000, that is, one part of the pure Wine of Cardui to 1,000 parts, we will say—well, to illustrate, one ounce of Wine of Cardui to 1,000 ounces of solution in which the strip was contained. Then I increased the strength of the Wine of Cardui up to as much as 1 to 50 parts of the bath, and with this solution the contractions were not altered from the normal at all.

Now I also used both with the Wine of Cardui and with the viburnum prunifolium and the other drugs I mentioned, I used these from which the alcohol had been evaporated. With the Wine of Cardui I evaporated them first by placing on boiling water to drive off the alcohol, and then I evaporated them simply at body temperature, that would be about 98 I believe, by holding it under an electric fan so that the current of air would drive off the alcohol, and by similar procedures with the fluid—extracts of viburnum and the other drugs mentioned, and I found that there was no change from the normal with these evaporated solutions, either.

Mr. T. J. Scofield: Q.—Now, Doctor, what strength of sodium valerianate did you use? A.—Up to one part in 1,000. The sodium valerianate is a salt, and I simply put enough to make one part of this sodium valerianate in the bath to 1,000 parts of water.

Q.—Now, Doctor, have you made any experiments of the effect of drugs on the human uterus? A.—I have.

Q.—Explain the methods that you used, and the results that you obtained? A.—I used exactly the same method as I have just described, and with this method I used the same drugs I have described, with the exception of the sodium valerianate. I did not use that. Otherwise I used the Wine of Cardui and the other drugs I mentioned before.

Q.—Well, state what you observed as you tried these experiments? A.—The contractions of the uterus, of the human uterus were not in any way altered by any of these drugs. With the Wine of Cardui I used again up to from one part in 1,000 to one part in 50, and the contractions were not altered from the normal in any way, that I observed.

Q.—Now, will you tell us, Doctor, whether or not the results which you obtained in these experiments in the use of the human uterus were different from the results you obtained in the use of the uteri of animals? A.—No, the results were just the same whether I used the uterus of the guinea pig or the uterus of the woman, the results were just the same. That is, none of the drugs in this series that I used had any effect on the contractions at all.

Q.—I might ask you whether or not you made the experiment on the human uterus of more than one person? A.—Five all together.

Q.—Five uteri? A.—Yes, sir.

Q.—Human uteri? A.—Yes, sir.

Q.—And what you have said relates to them all, to each of them? A.—Yes, sir.

Q.—Now, will you tell, doctor, where you obtained the human uteri which you used? Where did you get the uterus? The human uterus? A.—I got them from — in all there were three hospitals in Omaha. I called up or notified the house physician or surgeon that I wanted material from the human uteri, of the human uterus, and they sent them to me by messenger. Simply called me up and told me they had them, and asked me if I wanted them. I said I did, and they sent them out by special messengers.

Q.—Was that the only connection you had with the obtaining of the uteri? A.—Yes, sir.

Q.—They came from operations which had been performed in different hospitals around over the city? A.—Yes, sir.

Mr. Walker:—He don't know that.

Mr. T. J. Scofield:—What is that?

Mr. Walker.—He got them from somebody that sent them from a hospital. He don't know that himself. That is all hearsay.

Mr. T. J. Scofield:—Oh, yes, I suppose that is true in a way. That is all, your Honor. But I guess they were not cutting them out without they were in the hospital.

Mr. Walker:—Oh, I think they probably operated on their jugular first and stuck the salt solution in.

That is all.

CROSS-EXAMINATION BY MR. HOUGH

Q.—Doctor, can you tell the difference between the human uterus and the uterus of an animal when you see a strip of it apart from the animal itself? A.—Not by simply looking at it. You said part of the uterus?

Q.—What? A strip of it apart? A.—I had the entire uteri. The whole uterus was sent to me.

Q.—Of which? A.—Of the human.

Q.—Was that a healthy specimen of a uterus? A.—Two came from an early cancer of the uterus, of the cervix, two of them.

Q.—Were these live or dead people? A.—The patients all recovered from the operation. I inquired before I came here.

Q.—What was the uterus taken out for? A.—Two of them, as I just stated, were taken out because they had an early carcinoma.

Q.—Do you know the names of the persons from whom the uterus was taken? A.—No, sir; I don't know the names. At least, not offhand.

Q.—Then you don't know if they are alive or dead, do you? A.—Yes, sir.

Q.—You don't know of your own knowledge if they are alive or dead? A.—Shortly before coming here I saw the house physician—

Q.—I am not asking you about what was told you. I am asking you about what you know. A.—The house physician told me that they were.

Q.—One minute. I am not asking you what the house physician told you. I am asking you what you know. A.—I know nothing about these patients.

Q.—That is what I wanted to know. A.—Aside from what the house physician told me.

Q.—What was the matter with the other three uteri? A.—The other three were removed because the patient had disease of the ovaries and the fallopian tubes, and the history, as I obtained it, was that the patient would make a much better recovery if the uterus was removed as well as the ovaries and the tubes. The ovaries and tubes had to be removed.

Q.—Doctor, do you know, or have you ever read of any investigations on isolated uteri or strips which produced different results from those which you produced? A.—No, sir.

REDIRECT EXAMINATION BY MR. T. J. SCOFIELD

Q.—Doctor, what is sarcoma? A.—Carcinoma; cancer.

Q.—Well, carcinoma? A.—Cancer. It is a disease—

Mr. Hough:—Well, I object to that.

THE COURT:—Well, don't let us go into that.

Mr. T. J. Scofield:—All right, cancer. Just so we understand that. That is all, Doctor.

TESTIMONY OF DR. H. O. BYRD

Dr. H. O. Byrd was called as a witness for the defendant.

DIRECT EXAMINATION BY MR. SIZER

Dr. H. O. Byrd testified that he is a practicing physician residing in Trilby, Fla. He has been practicing since 1908 in that territory. Hookworm, malaria and tuberculosis are prevalent there. He was asked to state any specific instances in which Wine of Cardui was taken by patients whom he treated. He stated:

A.—One patient whom I treated was Miss Grace P——, last summer. She came to my sanitarium for examination and treatment. I examined her, and I found that she was suffering from a vaginitis and endometritis, both of gonorrheal origin.

Q.—Now those are inflammatory diseases, are they? **A.**—They are inflammatory diseases.

Q.—Of the vagina and the uterus? *A.*—Of the vagina and the uterus, and the endometrium, the inner lining of the womb.

Q.—And they were of gonorrheal origin, you say? *A.*—They were of gonorrheal origin. That was confirmed by microscopical examination. She also suffered from a retroflexion of the uterus, and an ovaritis and a chronic catarrhal appendicitis. She was also far advanced in a case of tuberculosis.

Q.—Now in giving the history of her case did she tell you what she had been taking? *A.*—She did. She stated that she had been taking Wine of Cardui for a period of several months.

Q.—Had it been of any benefit to her condition?

Mr. Walker:—That is objected to. I don't know that there is any claim here made of curing tuberculosis and appendicitis.

THE COURT:—The objection is sustained, because he has told the condition as disclosed to him and as he saw it.

Mr. Sizer: *Q.*—Yes. You have told the condition that existed when you treated her? *A.*—I might state further that she also had menorrhagia.

Q.—Was the menorrhagia produced by these conditions that you speak of, the vaginitis? *A.*—Yes, sir.

Q.—In other words, that was a symptom? **A.**—That was a symptom of the disease with which she suffered.

Q.—Well, did she say what she had been taking the Wine of Cardui for? *A.*—She said that she had been taking the Wine of Cardui for the female trouble, and when she began taking that, that is what she was taking it for, and she didn't know that she had tuberculosis until after she had been taking it several months, and she went to Dr. Snow of Tampa, and he examined her and told her that she had tuberculosis, and he referred her to my sanitarium.

Q.—You keep a sanitarium there, do you? *A.*—I did.

Q.—Well, did you treat this patient, and what was the result of this case? *A.*—I didn't treat this case. I kept her there about a week or ten days during the examination, and we don't take any far advanced cases of tuberculosis, and for that reason I did not treat her.

Q.—When she came to you was she too far advanced for any treatment to benefit her? *A.*—She was.

Q.—Now, then, take the next case. *A.*—The next case was Miss Mattie C—— K——. She was a girl nineteen years old, suffering from amenorrhea and general weakness and exhaustion. She came, and I examined her.

THE COURT:—When was that, Doctor? *A.*—That was in the year of 1913. She had been taking Wine of Cardui for some months, and she was also an advanced case of tuberculosis.

Mr. Walker:—This all goes in, I take it, under that same objection that we have made?

THE COURT:—Yes.

Mr. Sizer: *Q.*—From the examination that you made, to what cause did you find that amenorrhea was due? *A.*—In that case the amenorrhea was due to the tuberculosis.

Q.—That was another tuberculosis case? *A.*—It was.

Q.—Well, did you treat her? *A.*—No, I did not.

Q.—Was she also too far advanced? *A.*—She was too far advanced, and she was not allowed admittance to the sanitarium.

Q.—Did she tell you how long she had been taking Wine of Cardui for this trouble? *A.*—She said that she had been taking it for several months, first began when this weakness and amenorrhea began, and continued taking it until she came to me, which was six or eight months after she had first begun taking Wine of Cardui.

Q.—Well, now, proceed with the next case. *A.*—The next case is the case of Mrs. O. H. H——. Mrs. O. H. H—— had—

Q.—First, what was her age? *A.*—Her age was thirty.

Q.—And when was it you treated her, or examined her case? *A.*—I examined her last fall, and she had retroflexion of the uterus, she had hookworm, and she had malaria.

Q.—Well, now, what were the symptoms of those things? Did she have amenorrhea or other derangement of the menstrual functions? *A.*—She had amenorrhea, and she was anemic, she was weak, she was nervous, and she had incipient tuberculosis.

Q.—Had she been taking Wine of Cardui? **A.**—She had been taking Wine of Cardui for about four months.

Q.—Well, what did you do with her case? **A.**—I gave her thymol.

Q.—What was that for? *A.*—That was for the hookworm, and I gave her then iron, arsenic, quinin and strychnin, and put her on a nutritious diet, fresh air, rest and nourishing diet.

Q.—Is she now a patient of yours? *A.*—No, sir; she is not now.

Q.—Do you know what her condition is at present? *A.*—Why, her condition is much better than what it was. In fact, the tubercular process has been arrested, and she weighs now more than she has ever weighed in her life. Her health is better than it has been for several years.

Q.—Doctor, I wish you would define the term amenorrhea for the benefit of the jury. You used that a little while ago. What do you mean by that? *A.*—I mean by that a stoppage of the menstrual periods.

Q.—You say in her case that was due to the hookworm and the tuberculosis? *A.*—And the malaria, the three combined.

Q.—Well, take the next case, doctor.

THE COURT:—Well, just a minute. So far as that patient was concerned, when you discharged her what was her condition as to the female troubles, so far as you know? *A.*—As to the female trouble it was somewhat improved. I used a local treatment, tampons and pessaries, and supported the uterus the best that I could with that treatment. In that case it was not an operative case, owing to the fact that she had an active tuberculosis, and I did not think it advisable to give her an angesthetic, and for that reason it was not operated on. But her female condition was improved from what it was when I saw it first.

Mr. Sizer: *Q.*—Would it be necessary for her to have an operation in order to cure that retroflexion or retroversion, whichever you said it was? *A.*—Well, it would be necessary to cure it, but owing to the tubercular process I did not deem it advisable to operate on her at this time.

Q.—Yes. Well, now, take the next case. **A.**—The next case is the case of Miss Lulu M——, aged nineteen.

Q.—What was her name? *A.*—Lulu M——.

Q.—Spell that name? *A.*—M——. I saw her in January.

Mr. Sizer: *Q.*—Of this year? *A.*—Of this year.

Q.—Well, what was her condition? *A.*—She was suffering from amenorrhea symptoms, anemia, hookworm, malaria and pellagra.

Q.—Now, did the hookworm and the malaria and the pellagra produce the symptoms of anemia and amenorrhea? *A.*—It did in this case.

Q.—It did in this case. And had she been taking Wine of Cardui? *A.*—She had been taking Wine of Cardui since September.

Q.—Since September of last year? *A.*—Last year.

Q.—That is about four or five months? *A.*—Yes, sir.

Q.—Well, what treatment did you give her? *A.*—I gave her thymol; I gave her iron, arsenic, quinin, strychnin, and put her on a nutritious diet?

Q.—And what is the subsequent history of her case? **A.**—She is well.

Q.—Take the next case. Doctor, I am reminded that the term "pellagra" has never been defined. What do you mean by that? Please tell the jury what that is. *A.*—Pellagra is a disease that we have in the South, and the origin of it, of course, is not definitely settled by the medical profession, I believe. It is a wasting disease, something on the order of tuberculosis.

Q.—Well, does it, among other things, produce female derangements? *A.*—It produces female derangements, at least the symptoms of them.

Q.—Well, the symptoms of them, yes. Now do you recall any other specific cases that you treated? *A.*—I cannot recall any other specific cases owing to the fact that on the 12th of December, last, my sanitarium was burned, and all the records that I had there were destroyed. I know in a general way of numerous other cases that had been taking Wine of Cardui.

Q.—And which came to you for treatment? **A.**—And came to me for treatment.

Q.—And did you treat some of them, and did they recover? *A.*—Some of them I treated recovered. Of course there were some that I didn't treat. We did not take any far advanced or incurable cases. We only took the incipient cases and the moderately advanced.

Q.—Could you say, Doctor, what per cent of the women patients who come to you are suffering with malaria? *A.*—Well, I suppose that 90 per cent. of the patients whom I treat have an infection of malaria. I do not mean to say by that that all of them are suffering from the symptoms of malaria, but they have the infection.

Q.—And how about hookworm? *A.*—Hookworm, in my immediate district there are about 80 per cent. of the schoolchildren, in my district, that are or were infected with hookworm.

Q.—And you say both hookworm and malaria produce anemia and more or less disturbance of the menstrual functions? *A.*—Yes, sir, they do.

Q.—What per cent. would you say, according to your best estimate, of the women who come to you for treatment have been taking Wine of Cardui before they come to you?

Mr. Walker:—That is objected to.

THE COURT:—That is pretty general. We have the specific cases.

Mr. Sizer:—The records are burned, Your Honor, and I think that that is about the only thing—

THE COURT:—Yes, that is just it. Now, how are they going to get at the real facts on cross-examination?

Mr. Sizer:—All right.

Q.—Doctor, how do you determine whether a patient is suffering from hookworm? *A.*—I make a microscopical examination of his stool, and if there I find the ovum, why I diagnose it as a case of hookworm.

THE COURT:—You needn't go into details.

Mr. Sizer:—Well, that shows the presence of the hookworm? *A.*—That shows the presence of the hookworm, in the stool.

Q.—How do you determine the presence of malaria? *A.*—By microscopical examination of the blood. There we find the malarial parasite.

Q.—Do you know any cases, Doctor, of either men or women taking Wine of Cardui as a beverage? *A.*—I do.

Q.—State any cases of that kind that you know.

Mr. Walker:—Same objection as we have made all the time.

THE COURT:—Yes, and the same ruling.

To which ruling of the court the plaintiffs, etc., excepted.

A.—In 1901 and '02 I was working in a general merchandise store at Scranton, South Carolina. There I sold Wine of Cardui on numerous occasions. I sold it from one bottle to a dozen bottles at one time and to one individual. On numerous occasions I sold it to one man, particularly I have in mind, by the name of Jack L——. I have sold it to him in five and ten-dollar lots. I have seen him buy that much, wrap up all the bottles but one, and I have seen him take one bottle out behind the store, take the cork out and drink the contents of the bottle without taking it from his lips. I have also seen my brother do the same thing; S. O. Byrd.

Mr. Sizer: Q.—Any other cases of that kind that you recall now? *A.*—In 1909 my brother developed tuberculosis. He was at that time living at Homerville, Georgia, and he came down to Trilby, moved there, and there he recovered from the tuberculosis. During that time, however, he had stopped drinking, and there being no drug store there, and I having to dispense my own drugs, my practice, which was to the extent that I couldn't handle all of my own drugs, and he having had several years' experience in the drug business, I allowed him to operate a little drug store for me. There he began drinking again, and he drank Cardui, among other patent medicines, to the extent that I had to sell him out and put him out of business. I have seen him drink as much as three or four bottles in one afternoon.

Q.—Well, any other cases? *A.*—No, that is all the cases that I can call to mind at the present time.

CROSS-EXAMINATION BY MR. WALKER

Q.—Doctor, how did you get into this case? *A.*—Into what case?

Q.—The one here that you are testifying in? *A.*—I got a letter from the Secretary of the Florida Medical Association asking several—

Q.—I didn't ask you the contents. You got a letter from them? *A.*—I did.

Q.—Well, go ahead. You can tell what he asked you. *A.*—I don't know what he asked. He asked some questions in regard to Wine of Cardui. I couldn't state the questions.

Q.—Was a letter from Dr. Heizer enclosed with his letter? *A.*—There was not.

Q.—Any other letter or communication enclosed with it? *A.*—There was not.

Q.—What is the name of that gentleman who sent the questions to you? *A.*—Dr. Graham S. Henson of Jacksonville, Florida.

Q.—Did you ever meet Dr. Heizer? *A.*—I have.

Q.—When for the first time? *A.*—November the 30th, last year.

Q.—Where? *A.*—Tampa, Florida.

Q.—Who introduced you to him? *A.*—I introduced myself to him.

Q.—Was there anyone in his company at the time? *A.*—There was not.

Q.—How did you know that he was to be there at Tampa, Florida? *A.*—I had a letter from him stating that fact.

Q.—You did have a letter from Heizer? *A.*—I did.

Q.—Have you got the letter with you? *A.*—I have not.

Q.—When did you get a letter from Dr. Heizer? *A.*—I don't remember the date.

Q.—How many days before you went to Tampa? *A.*—Several days. I don't remember the date.

Q.—Did the letter call for a meeting at Tampa, Florida? *A.*—It asked would I meet him here.

Q.—Anybody go up with you from Trilby? *A.*—Yes, sir.

Q.—Who? *A.*—My wife and baby.

Q.—Any other persons? *A.*—No, none that I know of.

Q.—Who is paying your expenses? *A.*—Why, I don't know. I haven't been paid yet.

Q.—Do you expect to be paid? *A.*—I do.

Mr. Sizer:—Well, we have admitted that we expect to pay. The American Medical Association will pay all their expenses and for their time.

Mr. Walker:—And for the wife and baby do you—

Mr. Sizer:—No.

Mr. Walker:—I am asking him. I want to see how far your admission goes.

THE COURT:—He is not on the stand, Mr. Walker.

Mr. Walker:—Well, I asked the witness and he interrupted me.

THE COURT:—He admitted that they were paying the expenses of all their witnesses, and then you made the suggestion about the wife and baby, which, of course, had nothing to do with the case.

Mr. Walker:—Well, it might, if they were paying their expenses.

The Witness:—I might state that I was paying my wife's and baby's expenses.

Mr. Walker:—I move it be stricken out.

Mr. T. J. Scofield:—No, he has a right to state that.

The Witness:—Well, the question was asked about that, and—

Mr. Walker:—I didn't ask you any question about—

THE COURT:—Well, we will leave the record as it is.

Mr. Walker: Q.—When did you leave Trilby? *A.*—I left Trilby Saturday a week ago.

Q.—Were there any other people besides your wife, baby and yourself that came from Trilby? *A.*—Not that I know of.

Q.—Any from Tampa, any of your friends? *A.*—Not that I know of.

Q.—The state doctor that wrote you in the first instance, is he here? *A.*—I don't know that he is.

Q.—Have you got the letter that Heizer wrote you to come down and meet him in Tampa, have you got that with you? *A.*—No, sir, I have not.

Q.—Doctor, when was it that you put your brother in the drug store, and where? *A.*—That was at Trilby, Florida, in 1909, '10.

Q.—Is your brother living now? *A.*—He is.

Q.—Where is he living? *A.*—He is at Cade, South Carolina.

Q.—What is his given name? *A.*—Stephen O. Byrd.

Q.—Did I get the date at which you opened the drug store? I don't remember if you did give it.

Mr. Hough:—1909.

The Witness:—1909.

Mr. Walker: Q.—1909? And how long was it open? *A.*—It is open yet, but he is not operating it.

Q.—Had you had a drug store before 1909, before you put your brother in a drug store? *A.*—I didn't have a regular drug store. I handled all the medicines I prescribed.

Q.—Did you handle any patent medicines, as you call them, at that time? *A.*—I did not.

Q.—Were you interested in any drug store in 1901, prior to the—*A.*—I was not.

Q.—Have you ever been interested in any drug store other than the one that your brother operated for you? *A.*—I am interested in one now.

Q.—And is that the same one? *A.*—That is the same one.

Q.—When was it you first saw Jack L——, as you say, drink a bottle of Cardui? *A.*—That was in 1901.

Q.—Where was that? *A.*—That was at Scranton, South Carolina.

Q.—Did you live in Scranton then? *A.*—I did.

Q.—Where did he get the Cardui? *A.*—He bought it from me.

Q.—And how many bottles? On that first occasion? *A.*—I couldn't say how many bottles I sold him on the first occasion that I ever saw him drink it.

Q.—How long did you stay in Scranton? *A.*—From the time I was born until 1902.

Q.—About how long after you first sold Wine of Cardui to Jack L——? *A.*—Did you say when I sold it to him first? When did I sell it to him first?

Q.—I say, about how long after you first saw Jack L—— drink Wine of Cardui before you moved from Scranton?

Mr. Loesch:—He said he has lived in Scranton all his life.

Mr. Walker:—Why, as I understand it he is in Trilby, Florida, now.

The Witness:—I am now.

THE COURT:—Just when did you leave Scranton to go to Trilby?

Mr. Walker:—I thought he said in 1902.

The Witness:—I didn't leave Scranton—oh, I left Scranton, and from there I went to Augusta, Georgia.

Mr. Walker:—Well, did you leave Scranton in 1902? *A.*—I did.

Q.—Yes. Well, how long was it before you left Scranton that you first saw Jack L—— drink Wine of Cardui? How many months? *A.*—About a year, or possibly more.

Q.—Did you run the drug store, or sell drugs through that year? *A.*—I didn't run a drug store. I sold patent medicines in this general mercantile store.

THE COURT: *Q.*—Was this your store, or were you working for somebody else? *A.*—No, sir, it wasn't. I was working for somebody else.

THE COURT:—Clerk in the store? *A.*—Clerk in the store.

Mr. Walker: Q.—Now, how many times before you left Scranton did you see Jack L—— drink Wine of Cardui? *A.*—About a hundred times. Possibly more.

Q.—Did you sell it every time to him? *A.*—Not every time. I have seen him drink it at times when I didn't sell it to him.

Q.—How many times did you sell it to him? *A.*—How many times did I sell it to him?

Q.—Yes, how many times did you sell it to him, you, yourself? *A.*—I couldn't say, Mr. Walker.

Q.—And would he buy half a dozen bottles at a time? *A.*—He would.

Q.—And then he bought it one hundred times, then he bought this at one hundred times during that year from 1901 until you left Scranton? *A.*—Yes. The two years. I beg your pardon, 1901 and 1902.

Q.—Oh, you were in Scranton all of 1901? *A.*—All of 1901.

Q.—And all of 1902? *A.*—And all of 1902.

Q.—Then in what month was it—was it in January, 1901, that you first saw him take a drink? *A.*—I couldn't say whether it was January of February.

Q.—Well, was it February? *A.*—No, it wasn't. It was in the summer.

Q.—Or in March—oh, it was in the summer. Then when was it you saw him while you were in Scranton take the last drink of Wine of Cardui? *A.*—That was in December, 1902.

Q.—Well, you saw him one hundred times drink Wine of Cardui, you say, in a year and a half? *A.*—Yes, at least that many.

Q.—Buying how many bottles at a time? *A.*—He would buy anywhere from one bottle to a dozen.

Q.—Each time? *A.*—Each time.

Q.—A hundred times a year? *A.*—Yes, in the 18 months or the two years.

Q.—And how many bottles did he drink in your sight each time? *A.*—I have seen him drink one on numerous occasions.

Q.—One bottle. What did he do with the others? *A.*—I couldn't say. I didn't see what he did with them.

Q.—Took them away with him? *A.*—I didn't see. I suppose he drank them.

Q.—You didn't see? *A.*—I didn't see him drink them all. I suppose he drank a hundred.

Q.—Was he a negro or white man? *A.*—He is a white man.

Q.—What is the name of the store? *A.*—Winslow W——.

Q.—Is that store in existence now, or don't you know? *A.*—Well, that store was burned a couple of years, ago, but Mr. W—— is connected with another store now.

Q.—What is Mr. W——'s first name? *A.*—It is Winslow W——.

Q.—Where did he buy the Wine of Cardui? *A.*—I don't know.

Q.—You don't know whether he got it from drummers or jobbers or directly from the Chattanooga Medicine Company? *A.*—I had nothing to do with the buying of the goods. I was only a clerk.

Q.—What was Jack L——'s business? *A.*—He was a farmer.

Q.—On a farm? *A.*—He owned a farm.

Q.—Now, when did you first see your brother drink Wine of Cardui? *A.*—It was along during that same time.

Q.—That was along from 1901 to '02? Is that right? *A.*—Yes.

Q.—Was Jack L—— a drinker, an alcohol drinker? *A.*—He was a Wine of Cardui drinker.

Q.—Was he a drinker of whiskey? *A.*—Not that I know of. I never saw him take a drink of whiskey.

Q.—Did you have any whiskey at your store? *A.*—No, sir.

Q.—Was your brother a whiskey drinker? *A.*—He drank whiskey sometimes.

Q.—Yes. How many times did you see your brother drinking Wine of Cardui in 1901 or '02? *A.*—I couldn't recall the number of times.

Q.—Have you a more distinct recollection of the number of times Jack L—— drank it than you have of your own brother? *A.*—I have.

Q.—How frequently have you, yourself, seen your brother drink it? *A.*—I couldn't state the number of times.

Q.—Was he a dipso in 1901 and '02, your brother? *A.*—Was he what?

Q.—A dipso? A dipsomaniac? A drunkard? A booze fighter? *A.*—No.

Q.—Then you moved away, and then when did he get the tuberculosis? *A.*—He got that before he moved to Trilby in 1909.

Q.—And you knew he had been in the habit of drinking Wine of Cardui, when he came to Trilby? *A.*—I did.

Q.—How long after you set him up in the drug business did you begin to buy Wine of Cardui for him? *A.*—I didn't buy Wine of Cardui for him.

Q.—Well, how long afterwards, when he got back, after he quit drinking, was it that you set him up in the drug business with patent medicines that he drank, besides Wine of Cardui? *A.*—That was in the fall of 1909 or '10.

Q.—And how long was he in that business there before you put him out of the business? *A.*—Only a few months.

Q.—Did you have whiskey there at all? *A.*—No, sir.

Q.—What else did he drink? *A.*—He drank Hostetters' Bitters, Electric Bitters, and he drank some Peruna and other patent medicines. I couldn't enumerate them all.

Q.—All the stuff that you were keeping? *A.*—I didn't keep anything.

Q.—Who bought them? *A.*—He did.

Q.—Whose store was it? *A.*—His store.

Q.—Did you know he was buying them? *A.*—I did.

Q.—And that he was selling them? *A.*—I did.

Q.—And that he was drinking them? *A.*—Yes.

Q.—And you put him out of business? *A.*—I did.

Q.—Now, Grace P——, where did she live? *A.*—Grace P—— lived at—her post office was either Hudson or Fivey, I don't know which.

Q.—Was she in the habit of going to Trilby? *A.*—No, sir. I only saw her one time.

Q.—Only once? *A.*—Only once.

Q.—Did you ever see her drink Wine of Cardui? *A.*—No.

Q.—How old was she? *A.*—She was 26.

Q.—Is she living or dead? *A.*—I don't know.

Q.—What is the name of the town where she lived, if you know? *A.*—Where she lived?

Q.—Yes, when she came to your sanitarium, and you saw her first? *A.*—It was either Hudson or Fivey, I don't know which.

Q.—Did she have tuberculosis? *A.*—She did.

Q.—And vaginitis? *A.*—And vaginitis.

Q.—And endometritis? *A.*—And endometritis.

Q.—And what else? Leukorrhea? *A.*—Leukorrhea.

Q.—Or was it gonorrhea? *A.*—She had gonorrhea.

Q.—Yes? *A.*—Leukorrhea.

Q.—Anything else? She had gonorrhea, leukorrhea; is she the one that had appendicitis? *A.*—She had a chronic catarrhal appendicitis.

Q.—A chronic catarrhal appendicitis? *A.*—She had a retroflexion of the uterus.

Q.—It, of course, would not require any surgical operation to cure anything she had? *A.*—Why, if she would have been cured it would have been necessary to have had a surgical operation.

Q.—Did she die? *A.*—I don't know whether she did or not.

Q.—How long did you have her? *A.*—She was there a week or ten days.

Q.—And you didn't keep her there, because she was so far along that you couldn't take her, she couldn't be permitted to stay in your sanitarium? *A.*—She had taken Wine of Cardui until—

Q.—Did it give her the consumption or the appendicitis, or the clap, which? *A.*—It masked the symptoms of her disease until where she was incurable.

THE COURT:—Mr. Walker, there are some technical terms for these things that sound a great deal better than the common terms, if you will be good enough to use them.

Mr. Walker:—One of the terms was in the book, but I will use it that way. It was read here.

THE COURT:—That is true.

Mr. Walker:—But I will use it that way.

Q.—Did you attribute the appendicitis to the Wine or Cardui? Did you? *A.*—I couldn't.

Q.—Did you attribute the consumption to the Wine of Cardui? *A.*—I attributed—

Q.—Did you attribute the consumption to the Wine of Cardui? *A.*—I could not say I did. In a way I did.

Q.—Did you attribute the retroversion of the womb to the Wine of Cardui? *A.*—Not directly.

Q.—Did you attribute the vaginitis to the Wine of Cardui? *A.*—That aggravated the condition.

Q.—Did you attribute the leukorrhea to the Wine of Cardui? *A.*—That aggravated the condition; Wine of Cardui did.

Q.—Now, Mattie K——. What was her middle name? *A.*—Mattie C——.

Q.—Where did she live? *A.*—She lives at Floral City, Florida.

Q.—Is she living there now, do you know? *A.*—I do not know.

Q.—How old was she? *A.*—She was 19 years old.

Q.—What did she have? *A.*—She had amenorrhea and was suffering from anemia.

Q.—Did she have tuberculosis? *A.*—She had tuberculosis.

Q.—Anything else? *A.*—Not that I remember of.

Q.—Did she have tuberculosis at all? *A.*—She did.

Q.—Did she have malaria? *A.*—I do not recall that she did.

Q.—She had menorrhea? *A.*—She had amenorrhea.

Q.—Produced by these conditions of disease that you have spoken of? *A.*—Yes, sir.

Q.—What did you give her? *A.*—I did not give her anything; I did not treat her.

Q.—How old was she? *A.*—She was 19 years old.

Q.—How long did you have her under your care? *A.*—She was only there for examination, a week or ten days.

The witness was repeatedly cross-examined concerning the condition of Mrs. O. H. H—— and Miss Lulu M——. On cross-examination he was asked:

Q.—Did you ever prescribe viburnum prunifolium? *A.*—I have.

Q.—Whose? *A.*—I don't know whose.

Q.—Hayden's Viburnum Compound? *A.*—I never prescribed Hayden's Viburnum Compound.

Q.—Whose, do you remember? Was it the extract or in capsules? *A.*—I prescribed the fluid extract of viburnum.

Q.—How much alcohol was there in it? *A.*—I don't know; there is about 25 or 35 per cent., I think.

Q.—Do you know or do you recall whose manufacture it was? *A.*—No, I do not.

Q.—Do you know of any manufacture of viburnum prunifolium that is less than 55 per cent? *A.*—I do not, but I know the dose that I prescribe of viburnum prunifolium and to each dose they don't get but about ten drops of alcohol.

Mr. Sizer:—I submit that this is not cross-examination of anything.

THE COURT:—I was waiting for the objection, sir. Sustained.

Mr. Sizer:—We object to it.

To which ruling of the court the plaintiffs, etc., excepted.

Mr. Walker:—I got through with it before it came.

Mr. Sizer:—Well, it is all right; let it stand.

The witness was again examined concerning the names, addresses and ages of the various persons mentioned in his testimony. He was questioned concerning his brother as follows:

Q.—When your brother was drinking Wine of Cardui in 1901 and 1902 when you were working in that store in Scranton, did you give it to him or sell it to him? *A.*—I sold it to him.

Q.—How many times do you think you sold it to him yourself between the first of 1901 and 1902? *A.*—I do not know.

Q.—Did he drink it on the premises? *A.*—He drank it out back of the store.

Q.—He would come in and buy it from you, and then go out and drink it? *A.*—Yes.

Q.—How many times, can you tell me as a minimum that you recall when you sold it to him, and he went out to the back of the store and drank it? *A.*—Oh, not less than 20 times.

Q.—Every time he asked you for it, you would not think he intended—or would you know that he intended to go back of the store and drink it? *A.*—No, I did not know that. I could not tell what he was doing with it.

Q.—You knew that after the first time you saw him drink it, didn't you? *A.*—What was the question?

Q.—You knew that after the first time you saw him drink it, that he would do that? *A.*—No, I can't ever tell what a man is going to do.

Q.—Well, when did you wake up and discover that if you sold it to him, he would go outside and drink it? Was that after the twentieth time? *A.*—Oh, no.

Q.—Well about what time did you find out? *A.*—When I saw him drink it.

Q.—How many times do you think you sold it to him after you saw him drink it the first time? *A.*—I guess about twenty times.

REDIRECT EXAMINATION BY MR. SIZER

Q.—Doctor, you testified in answer to a question on cross-examination, that you attributed the consumption or tuberculosis that one of these patients was suffering with "in a way" to Wine of Cardui. What did you mean by that?

Mr. Walker:—That is objected to.

A.—I mean by that—

THE COURT:—He may answer.

To which ruling of the court the plaintiffs, etc., excepted.

A.—I mean by that, that the effect of the alcohol contained in the Wine of Cardui had a debilitating or depressing effect, or in other words, it aggravated the progress of the disease of tuberculosis and made it more active.

THE COURT: *Q.*—It did not contribute to the original condition, did it? *A.*—No, it did not contribute to the original condition. It only aggravated the condition and made it worse.

Mr. Walker:—Well, he said—

Mr. Sizer: Q.—Now, you also stated that it aggravated the gonorrhea. In what way did it have that effect? *A.*—Alcohol in any form will aggravate a gonorrheal infection. It makes it more active and the inflammation is greater than it would be without it.

Q.—Would it aggravate any kind of an inflammatory condition? *A.*—It will, especially gonorrheal infection.

Mr. Sizer:—That is all. Come down.

THE COURT:—Any more cross-examination?

Mr. Hough:—No, but we ask that he be classed as an expert.

THE COURT:—All this was brought out on the cross-examination.

To which ruling of the court the plaintiffs, etc., excepted.

The further hearing of the cause was adjourned until 10:30 o'clock the following day, April 7, 1916.

April 7, 1916, Morning

Court met pursuant to adjournment.

Dr. John Leeming called as a witness on behalf of the defendants, having been first duly sworn, testified as follows:

DIRECT EXAMINATION BY MR. T. J. SCOFIELD

Q.—What is your name? *A.*—John Leeming.

Q.—What is your profession? *A.*—Physician and surgeon.

Q.—Are you a graduate of any medical institutions, and if so, what? *A.*—Yes. I am a graduate of the University of Toronto, Canada, 1886; and of the Royal College of London, England, 1887.

Q.—Have you been practicing your profession, or continuing the study of your profession from your graduation to the present time, Doctor? *A.*—Yes, sir.

Q.—What hospital experience have you had, if any? *A.*—I have been attending surgeon at the Cook County Hospital for several years; Chicago Hospital; Lakeside Hospital; Provident Hospital; Chicago Baptist Hospital, for a period of over twelve years during about twenty years of my time in Chicago.

Q.—Have you been connected with any medical colleges? *A.*—Yes, sir.

Q.—What institutions have you been connected with, if more than one? *A.*—I have been connected with the Northwestern University Medical School for about ten years. For five years of the time I was clinical teacher of diseases of women and the balance of the time, during the same five years, was Professor of Materia Medica in that institution.

Q.—You speak of clinical experience during a part of that time. Is that in the Dispensary of the institution, Doctor, or not? *A.*—Yes. That is where patients from the outside come to the Dispensary to have examinations made and treatment applied in what we term a clinical way, in contradistinction to simply a didactic lecture on the subject, and, as it applies to the diseases of women, it means demonstrations on the living subject of the method of examining, how you discover the various troubles that the patient is suffering from, and the methods of adapting the suitable forms of treatment to whatever condition is found.

Q.—Now, is that what you call clinical work? *A.*—Clinical work, yes, sir.

Q.—About how many patients have you examined or treated clinically in connection with your dispensary experience in the Northwestern University? *A.*—It averaged 1,000 cases a year in the college work alone.

Q.—You speak of the Northwestern University. Where is that institution located? *A.*—It is located, as far as their medical department is concerned, at 26th and Dearborn Streets—25th and Dearborn Streets, here in Chicago. Their other departments are in Evanston, Illinois.

THE COURT:—Except the Law Department.

The Witness:—Except the Law Department, and that is downtown here.

Mr. T. J. Scofield: Q.—The Law Department is at the corner of Dearborn and Lake Street, is it not? *A.*—Dearborn and Lake, yes, sir.

Q.—Have you ever had any experience in studying your profession abroad? *A.*—Yes, sir.

Q.—Where did you study? *A.*—I took postgraduate study in London for a year after my graduation in Toronto, and before graduating at the Royal College of London, and I have taken several trips abroad to Vienna, Berlin, Paris and London, for further postgraduate study since that time.

Q.—Are you connected with any medical societies in any way, or a member of any medical societies? *A.*—Yes, sir.

Q.—Will you tell the jury what societies you are a member of. *A.*—I am a member of the Chicago Medical Society, the Physicians Club of Chicago, the Illinois State Medical Society, the American Medical Association, the Ontario Medical Society, the British Medical Society of London, and the Vienna-American Medical Society.

Q.—Doctor, I will get you to state whether or not you are familiar with the organs of the female pelvic cavity? *A.*—Yes, sir; I am.

Q.—Are you familiar with the diseases that are found or that arise or develop in the female pelvic organs? *A.*—Yes, sir.

Q.—Will you describe the female pelvic cavity briefly? *A.*—Do you mean the cavity and also the organs which it contains?

Q.—Yes. *A.*—The female pelvic cavity is the cavity that is surrounded by the pelvic bones to which the bones of the lower extremities insert on the outside and the vertebral spine at the back connects it with the upper part of the body so far as those bony connections are concerned. This pelvic cavity forms a sort of a bony basin, made up of two large bones on the side which are called the innominate or nameless bones which meet together at a point which is known as the pubic symphysis or union. They pass around behind and are joined by what is known as the sacrum or keystone bone, which bone consists of five bones sort of welded together. Those three bones, the two on the side and the one on the back form the bony pelvic basin.

In this bony cavity there are two parts; one, the part that is low down and that is technically known as the true pelvis, and above that, where the bones that form the hip bone and flare out, above that is what is known as the false pelvis.

The true pelvis down below contains the essential organs of reproduction in the female, in the normal or in the unimpregnated state. The large false pelvis, contains the womb, the important female organ during pregnancy; the reproductive organs are situated in the true pelvis and are, first, the womb itself, that is technically known as the uterus. This organ is a purely muscular body, about three inches long and two inches wide at its upper extremity or upper end, at the top, tapering down to what is known as the neck of the womb. That is about an inch in diameter both from before backward and from side to side. The upper part of the womb is flattened from before backward, so that while its width is two inches approximately, or one and three quarters inches from before backward, it is only about an inch. It resembles, somewhat, a small sized or ordinary sized pear, upside down, which is squeezed from before backward to flatten it.

The opening into the womb is from below, the same place where the stem goes into the pear, and that leads to the canal and up to the inside of this little muscular organ.

From each side of the upper end of this womb is a tube leading to the sides, that is known as the fallopian tube; one on each side, leading out, curved a little towards the back and leading out to the ovaries which are situated at the outer lateral sides of this true pelvis.

That constitutes the three important organs of reproduction. There are other accessory organs. There is the opening leading from the neck of the womb below to the outer world, that is known technically as the vagina, into which the neck of the womb protrudes, so that when the vagina is opened with a speculum or an instrument, the neck of the womb protrudes down into it and can be seen and examined.

The bladder is situated in front, immediately behind the pubic bone, and the rectum, the lower bowel, is situated behind.

Those organs are held in this true pelvis in a peculiar way, by ligaments. The ligaments are unusually large, considering the comparatively small size of the organs and they are made unusually large and strong on account of the possibility of impregnation taking place, when greater support is required.

The main ligaments which support the womb and its appendages, as the ovaries and tubes, are sometimes called or known as the broad ligaments. The broad ligament is a reflection of that membrane known as the peritoneum which lines the whole abdominal and pelvic cavity and is reflected around each of the organs within the abdominal and pelvic cavity, or most of them, as it passes down on the inside wall near all the organs and one of them, for instance is surrounded in that way (illustrating by folding handkerchief) by this folding of the peritoneum, just as the bowel is surrounded. Then the peritoneum passes along up against the abdominal or pelvic wall and this structure, the two folds of the peritoneum is known as the ligament which enfolds that organ; like the liver, the stomach, the spleen.

Then it comes down to the uterus or womb, this peritoneum, passes over the top of the womb from before backwards, extends out along the sides and is attached to the side of the pelvic wall and from where it leaves the womb itself and passes out to the side of the pelvic wall, that structure is known as the broad ligament. An inch and a half in width and there are two layers of this peritoneum one on each side of the womb, which holds the organ with a good deal of firmness, that is, firmness in the sense that it will move very little from side to side. It permits, however, of a considerable play from before backward, that play being necessary, dependent upon whether the bladder is full or empty, or whether the bowel is full or empty, either of which conditions make a certain amount of forward or backward movement necessary.

Through this broad ligament the blood supply and the nerve supply to the uterus, proceeds; the large arteries that pass in to supply the

uterus, the one above called the ovarian artery and the other down below called the uterine artery, then, the veins that carry the venous blood back to the large ascending trunks, carrying it up to the lungs, and so on, all pass in through this broad ligament, one on each side. That is the main ligament that supports the uterus.

In addition to this there are six other ligaments, three pairs. The two at the upper end are called the round ligaments, which pass forward (illustrating with folded handkerchief) this being the upper end of the uterus, they pass forward to a point at the middle of the groin that corresponds to what is known as the internal abdominal ring, the opening through which a rupture sometimes passes. This round ligament passes forward and its outer end goes into this ring and down in the inguinal canal in the groin.

The one on the other side of the uterus is similarly constructed and situated and the purpose of the two is to hold the uterus from going backward. They pass forward and a little downward. Those two ligaments act as sort of guy-ropes to hold the upper end of the uterus from falling back beyond the normal range of movement.

Then at the lower end of the womb, where the peritoneum passes down in front, it is reflected around on to the base of the bladder, in that form (illustrating by folding handkerchief), the bladder being in the front, and this little reflection of the peritoneum is known as the vesico-uterine ligament, which means bladder and womb ligament.

In the same way behind, the peritoneum is reflected back on to the rectum, the recto-uterine ligament. So that we have two on each side behind, two on each side in front; the two round ligaments that hold the uterus from falling backward and the main broad ligaments on either side which support the womb laterally and within the folds of which the blood supply and nerve supply passes to the womb.

Q.—Doctor, you have spoken of the uterus as a muscular organ. Will you please describe the muscles of the uterus, what kind of muscles you find in the uterus?

A.—The muscular fiber of the uterus is what is known technically as unstriped muscular fiber, the same sort of muscular fiber that exists in practically all of the involuntary muscles of the body, the stomach muscle, the bowel muscles and all the blood vessels, as well as the muscles of the uterus. The few muscular fibers that there are in the round ligament, are unstriped, differing from the voluntary muscles which we have under our control, all of which have transverse strips or fibers passing crosswise. Those latter are known as voluntary muscles and they differ in their histological form. That is when you look at them with a microscope, you can see at once that, if it is unstriped muscular fiber, it is involuntary muscular fiber, that is, not under the control of the will.

The womb is made up of muscles of that character that cannot be controlled at all by the will of the individuals. The walls are, in health, about half an inch thick. I think I said before that the weight of this organ was only about two ounces, or I should have said it. I mentioned the fact that its size is about three inches, and its weight is about an ounce and a half or two ounces, while its walls are about half an inch thick.

Q.—Now, Doctor, you spoke of involuntary muscles, what do you mean by that? I do not mean to ask you to describe them again, but what do you mean by an involuntary muscle?

A.—I simply mean a muscle that is not controlled by the will. A voluntary muscle means one that is under the influence of the mind, or under the influence of the will.

Q.—A voluntary muscle, then, is a muscle which responds to the direction of the mind? *A.*—Yes.

Q.—As, for instance, I will to raise my hand, and accordingly it is done. *A.*—Yes.

Q.—An involuntary muscle is one, is it not, which does not respond to mental control? *A.*—Yes.

Q.—Doctor, have you examined and treated many cases of female troubles, such, for instance, as arise or develop in the pelvic cavity? *A.*—Yes, sir.

Q.—Can you give us some idea of your experience in connection with such troubles? *A.*—Well, my largest experience of that kind, was at the time I was demonstrating these cases at the Northwestern University clinic and during the five years there I had charge of and treated approximately 5,000 cases, and I have had a large experience with that same sort of work for twenty years of my active practice.

Q.—I will ask you whether or not in the treatment of such conditions, it is necessary to make an examination in each case, for any purpose whatever; and if it is necessary for any purpose, for what purpose? *A.*—It is necessary to make a physical examination for the purpose of determining the character of the trouble that is producing the symptoms complained of. I mean by that, that there are symptoms that are common to a great variety of female troubles. Such symptoms as pain in the lower part of the back; a feeling of weight in the pelvis; a bearing down sensation; irritability and frequency of urination; irregular and disturbed menstrual function. Symptoms of that kind may mean one of twenty or thirty different conditions; so that in making an examination or in taking a case presenting this general state of symptoms, it is necessary to make some physical examination in order to know which of the twenty or thirty different conditions is producing the symptoms so that one may intelligently and rationally apply the suitable treatment for a given case.

Q.—Having made such diagnosis, you then are able to know what treatment to give? *A.*—Yes, one should then be able to intelligently prescribe and advise for such a case.

Q.—I understand you to say that there may be a large number of different conditions that such an examination may develop and disclose. *A.*—Yes, sir.

Q.—Is the treatment for these different cases, different conditions, identical or different? *A.*—The treatment varies with practically every case. Each case calls for its own line of treatment.

Q.—Doctor, I hand you a symptom blank sent out by the Chattanooga Medicine Company, which I have filled in, and I ask you to look at that blank and read the questions and answers and state whether or not a diagnosis can be made of the condition of the patient or the cause of the condition which gives rise to what the patient is suffering with.

Mr. Hough:—That is objected to as incompetent, irrelevant and immaterial, and as not justified under the plea of justification, which does not raise that issue.

THE COURT:—The only difficulty is that it is impossible to show, it seems to me, that this corresponds with any blank that was filled out and sent to the Chattanooga Medicine Company.

Mr. T. J. Scofield:—This, if the court please, is one of the blanks, which is contained in and came from the inside of a bottle of Wine of Cardui which they sent out.

THE COURT:—Yes, but the symptoms were not filled in.

Mr. T. J. Scofield:—No, but my proposition is that they cannot be filled in in a way that will enable a physician to tell what the underlying condition is which produces the particular symptoms of which the patient complains.

THE COURT:—Can't you ask the witness that question, rather than take a supposititious case? This particular case may never have been presented to anybody.

To which ruling of the Court the defendants, etc., excepted.

Mr. T. J. Scofield:—I will ask you then, Doctor, aside from the answers which we have inserted there, whether or not it is possible to determine from any answers that may be placed upon that symptom blank by a patient or by a sick person, what the underlying condition is in that patient, which causes the symptoms of which she complains?

Mr. Hough:—In addition to the other grounds of objection, I want to call the Court's attention to the fact that the issue in this case is not the advantage or disadvantage of two different methods of treating, but the question is as to whether this medicine contains any medicinal ingredient, and this question has nothing to do with that issue.

THE COURT:—I think that objection is well taken. The only thing that we have been concerned with is the efficacy of Wine of Cardui under certain circumstances.

Mr. T. J. Scofield:—That is not the sole question that is involved in this case under the issues. The question is whether or not this is a fraudulent business.

THE COURT:—No, a fraudulent medicine.

Mr. T. J. Scofield:—And that the business itself is built on deceit.

Mr. Hough:—Yes, but because of the allegation that it does not contain medicinal ingredients. That is the tenor of the entire article.

Mr. Walker:—There is nothing in the article in reference to the requirement of surgical operations or examinations or anything of the kind, nothing about a diagnosis beforehand, in any of them.

Mr. T. J. Scofield:—Does the court sustain the objection?

THE COURT:—Yes.

To which ruling of the Court the defendants, etc., excepted.

Mr. T. J. Scofield: *Q.*—Doctor, have you any opinion with reference to the advisability or the value of prescribing for female troubles without first learning the underlying cause which produces the symptoms?

Mr. Hough:—That is objected to for the same reason.

THE COURT:—That is not the question here. You may take up with the witness every conceivable disorder that a woman may have and ask him what the treatment is in his opinion, and then tell him that Wine of Cardui contains certain things and ask him what, in his opinion, what effect that medicine would have on a given disorder.

To which ruling of the Court the defendants, etc., excepted.

Mr. T. J. Scofield: *Q.*—Doctor, what has been your experience with the use of drugs in the treatment of diseases, which are peculiar to women? *A.*—Why, I have had a large experience in that line.

Q.—Now, in applying remedies to such conditions, upon what principles do you rely? *A.*—Well, I rely upon three especial things. First is my knowledge of the drug to be used; its chemistry; what it is made up; what are its active constituents? Whether it is an acid or an alkaloid; whether it contains alkaloid; in other words the chemistry, my knowledge of the drug to be used. And then, secondly, I rely upon my knowledge of the action of that particular drug as proven by pharmacological evidence, by positive evidence as to what that drug will do, together with the pharmaceutical end of it, the combining and putting together of drugs in form, according as they are prescribed. With that knowledge of the drug and a knowledge of its physiological action, I rely upon my knowledge of therapeutics, which means the application of drugs to disease, to scientifically apply the particular drug or combination of drugs in question, to the requirements of the particular disease that I am treating.

Q.—Doctor, are you familiar with a drug known as viburnum prunifolium? *A.*—Yes.

Q.—And if so, what has been your experience with it? *A.*—Well, I am familiar with it. I have used it over a period of 10 years, probably eight or ten years. My experience with it has been that it is negative in its effect; in other words, that I could obtain no action from its use in the various cases (and in very many cases) in which I prescribed it.

Q.—Are you familiar with a drug or with an herb or a medicine made from an herb known as cnicus benedictus? *A.*—I have had no experience with the use of the drug and I am only familiar with it in name.

Q.—Doctor, assume that a medicine—for the purpose of this question I will name viburnum prunifolium—is derived from the bark of a certain shrub; that it contains an active bitter principle, freely soluble in alcohol, and also a small amount of valerianic acid, a bitter brown resin, tannin, sugar, oxalate and citrate.

Assume that this medicine exercises a sedative action upon the spinal centers; assume that it lessens reflex excitability and irritability; assume that it has a special action on the uterus through the sympathetic system of nerves; that it is a uterine sedative; assume that it is a nervine, antispasmodic, tonic, astringent and diaphoretic.

Assume for the purposes of this question that it possesses these properties and that, as a result of such properties, it has been used with some benefit and apparent success in the treatment of threatened abortion, the nervous affections, accompanying pregnancy and in certain forms of dysmenorrhea and menorrhagia.

I want you also to consider in this same hypothesis or a continuation of the same, another medicine that I will term cnicus benedictus that is made from a thistle or weed which has been introduced into this country from southern Europe.

Assume that an infusion of this herb forms a grateful bitter, tonic and stomachic; resembles calumba and it contains a volatile oil and an amorphous bitter principle, neutral in reaction, slightly soluble in water, more so in hot water, and freely soluble in alcohol. This bitter principle is analogous to salicyn in composition.

Assume that this bitter principle in dose of eight grains given in divided dose is antiperiodic and is useful in intermittent fever. Assume that when a hot infusion of the herb is taken in large quantities, it is diaphoretic in action; also that it possesses some action as an hepatic and urinary stimulant. Assume that when large doses of the active principle are used, it may produce nausea, intestinal pains and diarrhea. Assume, further, that it is described in the American Dispensatory as follows:

"A cold infusion is a tonic, a warm infusion diaphoretic and emmenagogue, and if strong, emetic. Used as a tonic in loss of appetite, dyspepsia and intermittent diseases. Valuable, also in the forming stage of febrile and inflammatory affections. Colds may be broken up with it and it acts well in menstrual suppression from cold. Dose of the powder from 10 to 60 grains."

Also that it is described in the Dispensatory of the United States of America, 19th Edition, as follows:

"Water and alcohol its virtues. The infusion with cold water is a grateful bitter; the decoction is nauseous and offensive to the stomach. The active constituents are a volatile oil and a bitter principle. This bitter principle is crystalizable, inodorous, very bitter, neutral, scarcely soluble in cold water, more soluble in boiling water and soluble in all proportions in alcohol. Its formula is C 42-16, and it is analogous to salicyn in composition.

"Assume that in a dose of five grains it is said to cause vomiting, while eight grains given in divided dose is useful in intermittent fever. In cold infusion, this drug is tonic; when taken in hot infusion in large quantities it is diaphoretic; in larger quantities emetic."

That ends that quotation. It is also described in the National Dispensatory, as follows:

"A simple bitter. It is also said to be hepatic and a urinary stimulant. It may be employed in dyspepsia, especially when the hepatic form exists and like other bitters, it has been successful in the treatment of mild malarial infection. Overdose of its active principle sometimes produces nausea, vomiting, intestinal pain and diarrhea."

It is also described in Lloyd's Specific Medicine, as follows:

"Tonic, stomachic, diaphoretic and emmenagogue. A valuable remedy in colds; in forming stages of febrile and inflammatory diseases, in suppressed menses from cold, and in a debilitated state of the stomach."

It is also described in the Edinborough New Dispensatory, 4th edition, 1796, as follows:

"The nauseous decoction is sometimes used to provoke vomiting and a strong infusion to promote the operation of other emetics. But this elegant bitter, when freed from the offensive parts of the herb may be advantageously applied for other purposes. We have frequently experienced excellent effects from a like infusion, in loss of appetite, where the stomach was injured by irregularities. A stronger infusion made in cold or warm water, if drank freely and the patient kept warm, occasions a plentiful sweat and promotes all the secretions in general."

It is also described in Potter's Materia Medica, 1912 edition, as follows:

"It contains an amorphous bitter principle, which has been used as an antiperiodic in doses of from five to ten grains, but generally produces burning sensations and pharyngeal constriction, with nausea, vomiting, colic and diarrhea. It acts chiefly as a bitter tonic, resembling calumba and taraxacum most closely."

It is also described in Schumacher's Materia Medica of 1906, as follows:

"It is a bitter tonic used in Germany in digestive weakness and tonic hepatic complaints; its active principle has been used in intermittent fever in five to ten grain doses, but in this quantity it is apt to cause nausea, vomiting and diarrhea."

Q.—Doctor, I want you to have in mind the two medicines which I have described. I want you to assume that they possess the properties, which I have mentioned, whether you think they possess those properties or not, and I want you also to assume that they are taken in combination and in such proportions, that their best action will be obtained. I want you to assume further that these medicines are in a liquid solution which contains 20 per cent. of alcohol, the dose of this solution being a tablespoonful taken by the mouth, three or four times a day, so that each dose will contain 48 drops or minims of pure alcohol. Now, I desire you to carry this hypothetical question in mind while I base a number of questions upon it in reference to this preparation. Have you in mind the combination and ingredients now, do you think, doctor, that I have described? *A.*—Yes, sir.

Q.—From the description I have given you, are you able to form an opinion in regard to the physiological action, and the therapeutic value of such a medicinal solution? *A.*—Yes, I think so.

Q.—Doctor, are you acquainted with the disease known as gonorrhea in women? *A.*—Yes.

Q.—What sort of a disease is this, and what is it due to? *A.*—Gonorrhea is an inflammation, a specific inflammation we call it because it is due to a specific micro-organism, a germ that has been isolated and described and is known by a specific name, the gonococcus of Neisser. This germ infects the tissues of the body in certain parts and sets up by its irritating action, an inflammation and that inflammation is known as gonorrheal inflammation.

Q.—Doctor, have you an opinion as to whether such a medicine, taken by the mouth for gonorrhea in woman, will act upon the course of the disease and is therefore not a mere palliative, but a scientific and specific remedy with a curative effect upon the seat of the trouble.

Mr. Hough:—That is objected to for two reasons. In the first place, the doctor is not qualified to answer the hypothetical question propounded by Judge Scofield. On the contrary he has stated facts from which it is apparent that he cannot answer that question as he says he has never tried that medicine, and knows nothing about it. In the second place the question is based upon a construction of a passage in the Home Treatment Book, which is not a proper construction to be given to that passage. Therefore the question is objected to for those two reasons. The passage referred to is under the heading of vaginitis and does not treat of gonorrhea in any way.

THE COURT:—He may answer.

To which ruling of the court the plaintiffs, etc., excepted.

A.—The question is, have I an opinion?

Mr. T. J. Scofield: *Q.*—Have you an opinion whether such a medicine as has been described— *A.*—Yes, I follow it now.

Q.—Taken by the mouth—all right. *A.*—My opinion is that such a medicine, taken by the mouth, is not a scientific treatment for the cure of gonorrhea in women. That it is not a palliative, which means a soothing relieving remedy, in any sense. That it would be the very opposite. That it would be harmful and hurtful to the patient who suffered from such a disease, on account of the irritating effects of the alcohol which it contains. The effect of alcohol in any form is known to have a very disastrous effect upon gonorrhea in whatever form, or whatever location it occurs. On the assumption given to me in the question of certain physiological actions of the two drugs, that are used, there is nothing in those actions (assuming them to be true) that would have any effect upon the destruction of the gonococcus, which is the essential cause of gonorrhea and therefore could not cure such a disease.

Mr. T. J. Scofield: *Q.*—What is necessary in order to destroy the germ; what kind of treatment? *A.*—The only treatment that will destroy the gonococcus, or essential germ of gonorrhea, is the direct application to the parts involved of a germicide that has the power of killing that particular germ when that can be reached in the early stages of this disease, before the germ itself and the inflammation which it causes has extended far up into the urethral tract, into the neck of the bladder. And it burrows down into the follicles in the mucous membrane, and when the disease advances to that stage it is difficult by local treatment or any treatment to actually apply your germicide to the gonococcus and destroy it. But it can be used successfully in the early stages of the disease, and there are many remedies as germicides that are known, which will destroy it. That is the scientific way to cure this inflammation that depends upon that specific germ.

Q.—What, in your opinion, would be the effect of giving three or four doses of such a preparation, containing 48 drops of pure alcohol per dose, taken internally by a patient who is suffering from a condition which is induced by gonorrhea? *A.*—The effect of a medicine containing that much alcohol, three or four times a day, would be to act as a marked irritation to the inflammation resulting from this germ. In different stages of the disease it acts differently. In the early stages, where the inflammation is acute, any medicine containing alcohol, even in minute doses, adds to and aggravates the acuteness of the inflammation. In the subacute stages, where the burning sensation and the heat and pain upon urination, and so on, is somewhat modified, the use of alcohol will rouse that subacute stage into an acute, burning stage again. And in cases of chronic condition, or even cases where the characteristic discharge of this disease is practically subsiding, the patient thinks she or he, as the case may be, is well, a few doses of alcohol in any form, such as you would get in a small glass of beer, or any solution containing alcohol, will immediately rouse up this latent condition into an acute form, and the

discharge will reappear, positively demonstrating that alcohol is contra-indicated, and should be avoided in all stages of gonorrhea.

THE COURT:—We will take a few minutes' recess now.

Mr. T. J. Scofield: Q.—Doctor, you have stated that you are familiar with the organs of the female pelvis. I have here certain charts which I wish you would examine, and state whether or not they correctly represent either the normal condition of the organs of the female pelvis, or misplacements of the same? A.—One of the charts represents practically a normal condition, that is the chart to the left.

Mr. Hough:—Pardon me, I suggest you mark those charts A, B, C, D and E, or 1, 2, 3, 4 and 5, and we can refer to them by number.

Mr. T. J. Scofield:—We will. We will mark them A, B, C, D and E.

THE COURT:—Beginning from the left.

(The charts referred to were marked respectively, A, B, C, D, and E.)

Mr. T. J. Scofield: Q.—You refer to which one of those charts in your answer? A.—Chart A.

Q.—What does the chart marked "B" represent? A.—Chart B represents an anteflexion of the uterus.

Q.—What does Chart C represent? A.—Chart C represents a retroflexion of the uterus.

Q.—What does Chart D represent? A.—Chart D represents a prolapse of the uterus.

Q.—And Chart E? A.—Represents retroversion of the uterus.

Mr. Hough:—Did he say what Chart A represented?

Mr. T. J. Scofield:—Yes, normal condition of the uterus. If the Court please, we offer these charts respectively as Defendants' Exhibits A, B, C, D and E of April 7, 1916.

The charts mentioned above, being respectively Defendants' Exhibits A, B, C, D and E, were received in evidence.

Mr. T. J. Scofield: Q.—Doctor, are you acquainted with the condition known as prolapsus or falling of the womb? A.—Yes, sir.

Q.—Will you tell the jury what prolapsus, or falling of the womb, is, and what causes it? A.—Prolapse of the womb simply means that the womb has fallen down out of its natural position, as shown in Chart A.

Q.—Before passing on, will you describe what the natural position is, and call the attention of the jury to any distinctive features that are apparent in such a state? A.—Well, the natural position of the uterus is high up, as indicated in Chart A. Its position from before backwards, is pointing somewhat upward. It is usually described in this way, that if a straight line is run through the canal, the uterine canal, that it would pass out of the human body at a point about at the navel. That chart shows that it would come out slightly lower than that, but that is only an approximation. It depends upon whether the bladder is entirely empty, or a quarter full, or half full.

THE COURT:—Doctor, you have described to the jury the contents of the pelvic cavity. Supposing you point out on the normal chart, Chart A, the location of the various organs so that the jury will know which is which.

A.—Yes, sir.

Mr. T. J. Scofield:—I was just about to call his attention to that.

Q.—Doctor, will you indicate, for instance, where the bladder is located at? Now, doctor, will you please indicate where the bladder is, on Chart A.

(The doctor stepped down from the witness chair, and indicated on the charts with a pointer.)

A.—This is the bladder, on Chart A, that presents that peculiar triangular shape. This is the canal leading from the bladder, which is called the urethral canal, leading to the outside. This is the pubic bone that I spoke of, in the front part of the pelvic bony basin. This is the wall of the bladder.

Q.—Now, you say the wall of the bladder. What is that? Does that divide the bladder from anything, and if so, what? A.—Why, yes, the wall of the bladder, which is represented by this pinkish looking line, not only represents the bladder wall, but the cellular tissue which covers the bladder wall. That is, the bladder wall is not so thick as it would appear to be in this, because there is fatty tissue in between the bladder wall and the abdominal wall here in front. There is fatty tissue. There is also cellular tissue in behind the bladder wall proper. When you come to this point where those tissues appear to unite, that forms what is known as the vesico-uterine ligament, that is the small fold of peritoneum which is represented by this dark line. It comes down behind, along the bladder, and then is reflected back and up over the womb, down along over the womb behind, and then reflected back up on to the bowel. And this organ that lies forward is the uterus or womb. As I say, the position is shown a little more forward than the average in a normal individual. The average would point about, as I stated, to the navel. But that position varies in a normal, healthy woman. When the bladder becomes a little more distended by urine coming into it through the ureters from the kidney, the uterus will be raised up so that it will assume a position in that shape (indicating), and there is a certain normal range of motion in this organ, depending on the fullness or emptiness of the bladder, and to some lesser extent upon whether the bowel is distended or not.

This passage here is called the vagina, which leads from the outer world up to and exposing at its upper end the neck of the womb, which protrudes down into the vagina. This structure here is immediately behind the vagina, and in front of the rectum; (this is the rectum here) this is a muscular structure which is known as the perineum, or the perineal body, and forms the floor of the pelvis and the support for the uterus or bladder, and the front wall of the bowel, filling up the space between the lower end of the bony spine here and the pubic bone in front, so that that structure which is made of several muscles, is represented here as being larger than natural, but is about an inch and a half in length from the posterior opening of the vagina to the rectum.

Q.—Doctor, will you tell us what the dark color that surrounds the uterus, and above the uterus, represents? A.—Well, this represents simply the inside of the abdominal cavity. The small intestines would be here, passing down in behind, both in front and behind. They will show just that dark color that represents the inside of the bowel, though the bowels are not shown, excepting the descending colon here is shown, which ends in the rectum.

Q.—Doctor, before leaving this position, I call your attention to Chart D, and ask you what it represents? A.—Chart D represents a uterine prolapse, a falling of the womb in the third degree.

Q.—Calling your attention again to Chart D, and the condition of prolapse which it represents, will you tell the jury what are the causes which lead to such a condition, if there are more than one cause? A.—There are a number of causes which may act separately, or may act conjointly. Very frequently more than one cause acts in producing a result of this kind. In a general way the causes of uterine prolapse may be described as follows: First, an increase in the weight of the organ or womb itself, making it heavier. Second, an interference with the supports of the womb from below, the perineal body that I pointed out a moment ago, which is sometimes torn in childbirth; a laceration of the outer part, it is commonly known as, or a laceration of the perineum. Sometimes that is so extensive as to go right back into the bowel, or nearly into the bowel, and tear through the muscles. That, if not repaired, either following the confinement or at the same time, later removes the support of these pelvic organs, and especially the womb, from below. That is the second cause.

The third cause is unnatural or undue pressure from above, that is as a result of heavy lifting and straining, and tight lacing, and a straining at constipation, and women who do hard muscular work, constant pressing down on this organ, even if it is normal in size, but especially so if it is enlarged, or there is a partial tear from below, where a combination of two or three causes will tend to do that.

Another very common cause is abnormal growths in the uterus. You get tumors growing in the uterus, like fibroid tumors, uterine polypi, growths on the inside, cancer of the uterus that increase its weight, and also by its direct pressure cause it to fall down. Those are four common causes which result in falling of the womb.

Q.—Are there any conditions which you think of that are associated with prolapsus, or may be? A.—There are other conditions that are always present in a uterine prolapse that has developed to anything like the extent that is indicated on Chart D. Where the uterus comes down so that any part of it is in the external world, if it is only the neck of the womb, whereas in that case fully half of the organ is outside, then on account of its connections, both in front and behind, through the two pairs of ligaments that I mentioned, the vesico-uterine ligament in front, and the recto-uterine ligament behind, as soon as the uterus comes down to straighten those ligaments out, it draws these parts that the other end of the ligament is attached to behind and in front, and it draws the bladder down with it. It draws the rectum down with it, as is shown in this Chart D. This is the bladder that is distorted into that peculiar shape, and the posterior wall of the bladder is drawn down to that point (indicating) instead of being in the normal position.

Q.—Where you say "drawn down to that point," can you describe it? A.—A point that will correspond to the level of the external world. Which is frequently the case in this so-called cystocele, which means a prolapse of the bladder, that this part of the bladder has to be pressed up into the vagina before the bladder can be emptied, on account of its having been drawn down by these ligaments that are attached from the front of the womb to the back wall of the bladder, pulling it down out of shape. The same thing is represented by this same Chart D, on the bowel wall. Instead of the bowel wall being practically in a normal curve, as shown in the normal figure, Chart A, down in that shape through the rectum, the front wall of the bowel is drawn down as indicated here (indicating Chart D) to the outside, on account of the posterior ligament pulling the front wall of the rectum down and out with the womb.

Those two positions, known technically as cystocele (falling of the bladder) and rectocele (falling down and protrusion of the rectum) always accompany a complete prolapse of the uterus, as shown in the Chart D.

Q.—Doctor, does a complete prolapsus of the womb bear any relation to, or does it partake of the nature of a hernia or rupture? A.—Yes, it partakes of it in a number of senses. A rupture is simply the protrusion of an organ in the abdomen, or in any other cavity of the body out of the cavity through some unnatural opening. Now, the womb in a rupture, if it is in the abdominal or pelvic cavity, always carries with it this peritoneal covering. A prolapse of the womb that is complete—that one is not quite complete, but nearly complete (indicating Chart D).

Mr. Loesch:—Chart D.

The Witness: (Continuing)—Is a rupture of the womb down through the vagina.

Mr. T. J. Scofield:—You are referring to Chart D? A.—Chart D. And it is exactly, in all respects, like a rupture. There has been a gradual development of the lengthening of this peritoneum, a gradual growth of the ligaments or guy-ropes which hold the womb in its natural position until they have lengthened to such an extent that the womb is actually in a condition of rupture outside of the body, and that, of course, in reference to the causes of the increased weight, when the uterus gets down low in that shape, the circulation through the

uterus is so markedly interfered with that it causes a damming back or water logged condition of the organ, and increase of its weight, and a greater drawing upon these already elongated and overstretched and thinned ligaments.

Mr. T. J. Scofield:—I would like, if the Court please, to have the doctor here illustrate what he means about the effect upon the circulation and the damming back, with chalk and blackboard, if I may be permitted to do so. We have sent for another blackboard. If we may put it on an easel it will take only a few minutes to make the explanation.

Q.—While they are arranging that, doctor, will you tell the jury the difference between arteries, so far as their construction is concerned, and the veins in the uterus and in the pelvic cavity? *A.*—The difference between the artery and the vein is that the artery which carries blood from the heart to the different parts of the body contains more of the elastic muscular fiber, this same unstriped muscular fiber that I described before, whereas the wall of the vein contains comparatively little of that elastic fiber. The difference in their structure is shown by the fact that when you cut across an artery it stays right open like a quill, whereas, if you cut across a vein it collapses, it has no resiliency in its wall like an artery that will stand wide open, and that has a great deal to do with a number of things connected with the circulation, not only in the pelvis but the different parts of the body. The blood pressure within the arteries, as a whole, is to a large extent determined by that one fact, that the elasticity of all the vessels, of all the tubes that carry the blood helps the blood pressure, that is what really makes the pressure.

Mr. T. J. Scofield:—We have this easel and blackboard here now, your Honor.

Mr. Hough:—I submit that while this is all very interesting, I don't see that it is very material. Some explanation may be needed by the jury to understand the subsequent testimony of the doctor, but I don't see that we need to go into a lecture on physiology or anatomy.

Mr. T. J. Scofield:—I assure your Honor that I think the expert—

THE COURT:—I can see the importance of it, and I would hesitate to express my opinion in the presence of the jury.

Mr. T. J. Scofield:—Yes.

Q.—Doctor, if you will explain what you mean.

THE COURT:—Now, what is the question, Mr. Scofield?

Mr. T. J. Scofield:—The doctor had said, in speaking of prolapse, and different membranes and ligaments being drawn down, that it interfered with the circulation in those parts of the body. I asked him if he could describe that so as to make it perfectly plain, by any illustration he might make upon the blackboard, and in that connection I had asked him to describe the difference between arteries and veins, which he had just done.

(The witness, Dr. Leeming, drew an illustration in chalk on the blackboard.)

The Witness: A.—This red figure represents the uterus, or womb, itself. This was intended for white, but it got discolored, but it represents the broad ligament which falls over the womb from behind forward, and is extended out in the shape of a fold to the bony pelvic wall, covering it over, as I illustrated before, in that form.

These structures represent the arteries and veins; the red represents here the ovarian artery that passes in at the top. The green (which should be blue, of course) represents the veins which carry the blood back to the large vessels, and up. The same below, with the uterine artery. This broad ligament (indicating) carries those vessels in its walls.

Now, where the uterus is down in a condition of prolapse, as shown on Chart D, the position of this broad ligament, with its arteries and veins and small capillaries, instead of being straight out from the pelvic wall to the uterus itself, is drawn down in that shape, to permit the uterus to descend and project into the external world. This drawn down ligament contains, as I stated before, these vessels within it. On account of the difference in structure between the walls of the arteries and the walls of the veins, this downward pressure squeezes the contents between its folds, but not enough to compress the arteries, but quite enough to compress the veins, just in the same way as, if you tie a string, or a handkerchief around your hand it won't interfere with the blood passing into your fingers, but it will interfere quite largely with the return flow, and it will make your hand blue, like a tight garter will, or anything of that sort, because of the fact that the venous wall is compressible.

So that when the uterus is in a condition of complete prolapse the veins are compressed; the arteries are not sufficiently compressed to keep the blood from getting into the part, but that dammed back condition of venous blood, due to the compression of the vein, makes the whole organ increase in weight, and heavy, and adds to one of the immediate causes that originally brings on the prolapse.

Mr. T. J. Scofield:—That is sufficient, Doctor.

(The witness resumed the stand.)

Mr. T. J. Scofield: Q.—Doctor, what is an inflammatory adhesion? *A.*—An inflammatory adhesion is the result of organized exudate that is thrown out following inflammation. In an inflammation in any of the inside organs nature throws out what is technically known as an exudate, serum of the blood, and that becomes organized, and after it organizes it contracts and forms bands that attach one organ to another. We term those bands inflammatory adhesions. They are not always bands. Sometimes they are quite thick structures, but when they occur in that way, as a result of the organization of the exudate that is thrown out after an inflammation, we get adhesions of one organ with another, or with parts of the same organ, like the bowels becoming adherent to each other on account of an inflammation.

Q.—Will you tell me, Doctor, whether or not a prolapse, such as is indicated on Chart D, is ever complicated in any way with inflammatory adhesions, or accompanied? *A.*—Yes, sir, it is.

Q.—Well, when it is so accompanied, will you describe the effect upon the prolapse, and the condition that exists there? *A.*—Well, the effect is this, that where you have an uncomplicated prolapse of that kind without any adhesions, it can be handled and treated just the same as the other forms of rupture. A rupture that comes down and out can easily be put back into position, and very frequently they go back into position if the individual lies down. The rupture will go right back into place, and as soon as they get up again it will come down and out, unless properly supported.

But if it is complicated by inflammatory adhesions it is impossible to change its position. It gets down into that position, and the adhesions grow around it, around the top of the womb, and hold it in its unnatural position so that it is impossible to replace it, even under an anesthetic, because it is held in its position by these inflammatory adhesions.

Q.—Doctor, how is the condition of prolapse treated? I do not confine you now in answer to that question to the picture as shown on Chart D, but the prolapse generally. And I wish you would explain the manner in which conditions of that kind must be treated or are treated.

THE COURT:—I think the answer to that question will take us quite a little beyond the adjournment, so we will suspend until 2 o'clock.

A recess was here taken until 2 o'clock p. m. of the same day, April 7, 1916.

April 7, 1916, Afternoon

The Court met pursuant to adjournment. Dr. John Leeming resumed the stand and further testified as follows:

DIRECT EXAMINATION (RESUMED) BY MR. T. J. SCOFIELD

THE COURT:—Read the question, Mr. Reporter, that was put to Dr. Leeming before adjournment.

(Question read as follows: "*Q.*—Doctor, how is the condition of prolapse treated? I do not confine you now in answer to that question to the picture as shown on Chart D, but the prolapse generally; and I wish you would explain the manner in which conditions of that kind must be treated, or are treated.")

The Witness:—The treatment of prolapse of the womb consists of determining the underlying cause of the prolapse and removing or undoing that cause. For instance, if the prolapse is due to an enlarged, heavy uterus, the result of a tumor that is growing in its wall, a removal of that tumor is correct treatment.

If it is due to a tearing of the supports from below of the perineum, which enlarges the opening and permits the organ to come down and out, there are two methods of treatment. One is temporary palliative treatment, which consists of putting the uterus back into its natural position, if it is not bound down by adhesions, and using some mechanical device for holding it in position; such an instrument as this I hold in my hand, as a pessary (exhibiting pessary to jury). The uterus is put back into position, and this pessary is passed up into the vagina, and the uterus is supported by that pessary which gets its support from the vaginal wall, and holds it in position. That method is not used so much as formerly.

Another method is to use some sterilized lamb's wool, properly medicated, to relieve the erosion and congestion around the neck of the womb which the rubbing of the prolapse has brought about, and thereby supporting or holding it up. That form of treatment is purely palliative.

Where these parts have been torn the only way of permanently relieving a prolapse that is due to that cause is to freshen the edges of the tear and stitch them together and rebuild the perineal body, the perineum, which is the muscular structure which has been torn, the uterus being put up and its parts restored to their normal position, that holds the womb up in place.

That is, in a general way, an illustration of the method depending upon the underlying cause which has permitted the prolapse to come down, and undoing and removing and curing that cause, thereby curing the prolapse.

Mr. T. J. Scofield: Q.—Doctor, will you state the progress towards prolapse of the uterus. Is it a thing that is rapid, or is it a thing which is slow? *A.*—Prolapse of the uterus almost invariably develops gradually and very insidiously. If the weight is increased from any cause, as after confinement the uterus does not contract down from its two-pound enlargement to the two ounces or two or three ounces, but remains too big, it begins to contract upon these guy ropes which hold it.

If the floor is partially destroyed, that helps to make it pull more on these ligaments. These ligaments will not stretch to any very great extent; but, by the constant drawing on them they gradually elongate and grow longer to permit the organ to gradually get down and down lower in the pelvic strait, until a condition of first degree prolapse. This here illustrates nearly a third degree. A second degree of prolapse is where the neck of the womb comes down just to the outside world.

A first degree of prolapse is where it is down say an inch below its normal position, which should be between three and four inches above the external opening.

Q.—In the early tendency towards prolapse, and after it has commenced to prolapse, the uterus, is it possible to arrest it in any way? *A.*—The earlier the proper treatment is applied to the given case, to the particular conditions, in the way of supportive treatment, the

progress of the — the development of the prolapse is thereby prevented. If any of these methods that I have used, outside of surgical measures, mechanical support is used, the tendency for the increase in the degree of prolapse is thereby avoided, by that proper, suitable treatment.

Q.—Well, suppose that you had not used any mechanical means of that kind, but you had relied upon medicines, such as I have described in the hypothetical question, what then would be the effect? *A.*—By relying upon the medicine you have asked me to assume, which has absolutely no effect in preventing the development of prolapse or curing a prolapse that has gone, even to a slight degree—by relying upon such a solution, you permit the causes which were operating to bring about the prolapse and still act to increase the prolapse, to go on at work until the uterus gradually descends lower and lower in the canal.

Q.—Now, Doctor, bearing in mind the hypothetical question—you have that in mind, I suppose? *A.*—Yes, sir.

Q.—Without repeating it here, I will ask you whether or not you have an opinion on this question, if this medicine is taken three times a day, until about three days before the menstrual period, when four doses a day should be taken until stoppage of flow, and that in addition to that, appropriate laxatives are used, together with antiseptic douches, sitz baths, etc., whether or not this medicine will cure that prolapse? *A.*—Such a medicine, in my opinion, so used, will have absolutely no effect in curing a prolapse.

Q.—Bearing in mind the hypothetical question, I will ask you whether or not you have an opinion as to whether or not such a medicine as I have described in the hypothetical question will cure falling of the womb in all its forms? *A.*—Well, such a medicine so taken will not cure falling of the womb in all of its forms.

THE COURT:—Will it in any of its forms? In your opinion?

The Witness:—In my opinion, it will not cure falling of the womb in any form, or in any degree.

Mr. T. J. Scofield: Q.—Now, bearing in mind the various hypotheses that were included in the hypothetical question, I call your attention to the following language: "Falling of the womb, whites, and falling of the womb are frequent companion diseases. Both are cured by the use of this medicine and suitable laxative treatments." I ask you whether or not you have any opinion as to the accuracy and the truthfulness of this statement? *A.*—Yes; I have.

Q.—What is that opinion? *A.*—My opinion is that the statement is positively untrue.

Mr. Walker:—Judge Scofield, I presume when you asked that question you meant to embody in each question the hypothetical question; isn't that right?

Mr. T. J. Scofield:—Well, did I state that?

Mr. Walker:—No, you said bearing in mind the hypotheses—

Mr. T. J. Scofield: Q.—Well, I will ask you this question, Doctor: Aside from the hypothetical question, whether or not you have an opinion as to whether this medicine that I have referred to, or this solution that I referred to in the hypothetical question, together with laxative treatments, will cure falling of the womb, whites and falling of the womb when they are companion diseases; whether or not they will be cured? *A.*—If I understand you correctly, you mean assuming, as you asked me to in the hypothesis, that the two medicines contained in that solution possessed the virtues that you attributed to them?

Q.—Yes, sir. *A.*—Even under those circumstances, it will not cure falling of the womb in all of its forms or in any of its forms.

Q.—Doctor, is there a condition which you designate as anteversion, and anteflexion? *A.*—Yes, sir.

Q.—Are those conditions, or either of them, represented on either of these charts, or shown on either of these charts? *A.*—No. There is no anteversion shown on the chart, but an anteflexion is shown on chart No. 2.

THE COURT:—Chart B.

The Witness:—Oh, yes, Chart B; they are lettered. Chart B shows the anteflexion.

Mr. T. J. Scofield: Q.—Will you describe to the jury what that consists of? *A.*—Well, an anteversion of the womb means that the body is flexed or bent upon itself. If this instrument (illustrating with pessary) represents the womb in its normal shape and position, showing its body and its canal leading to it; and the organ is bent from that position forward to that position (indicating with pessary), we term that anteversion—that is, bent upon itself in a forward direction.

In contradistinction to an anteversion—you didn't ask me about the other, did you?

Q.—Go ahead with the anteflexion, as well. *A.*—In contradistinction to a tipping forward of the organ as a whole—that is, simply a version forward, whereas, this is a bending of the organ upon itself; and we call this second illustration an anteflexion, and the first one an anteversion; the difference being that in a version, the canal is not cut off by the displacement, whereas, in the second, or the anteflexion, the bending of it forward causes the walls of the womb at the point of the bend to impinge upon each other and cuts off the caliber of the canal and interferes with the inlet of anything from without, or the outlet of menstrual blood, or other form of secretion from within; so that a flexion and a bend causes an obstruction, whereas a version does not cause any obstruction in the canal.

Q.—Now, Doctor, bearing in mind the hypothetical question, which I gave you, and based thereon, I will ask you whether or not you have an opinion as to whether or not the medicine or the preparation therein described is indicated for either antreflexion or anteversion, when the condition is not caused by growth or tumor? *A.*—The medicine you have asked me to assume is not indicated for either of those conditions, and could have no effect whatever in changing those abnormal positions of the womb.

Q.—What do you mean — what is meant by the word "indicated"? *A.*—By "indicate" I mean that the condition calls for a certain form of medicine or a certain form of treatment. We would say that such a condition as described "indicated" a certain form of treatment, and that means that it calls for that kind of treatment—such treatment is "indicated" for a condition of that sort. It is a sort of medical term that we use in that connection and in that sense.

Q.—Will you tell the jury what treatment is indicated in that sense, for that condition, that is, anteflexion or anteversion? *A.*—The treatment that is indicated for the condition depends upon the underlying cause which produced the condition; first, a removal of that cause, whatever it may be; second, an actual replacement of that bend — an actual changing it from that position up to its normal position. (Indicating with pessary.) It will not stay in that new position, but, after it is straightened up, then we use some mechanical device, depending upon — using the same term again — the "indications"—depending upon the case we have in hand, as to whether a tampon, or any other uterine stem pessary that is sterilized, and put inside to hold it in position—whether a lamb's wool tampon or other, to hold it in position—various mechanical means for overcoming a mechanical and structural change, is the only form of treatment that will accomplish results in cases of that kind.

Q.—Have you an opinion, Doctor, whether or not such a medicine as I have described in the hypothetical question, and based on the hypothesis therein contained, will remove the cause which produces or leads to anteflexion or anteversion? *A.*—Yes, I have an opinion.

Q.—What is that opinion? *A.*—My opinion is that such a medicine, assuming all the qualities you attribute to it, will have no effect in changing those abnormal or unnatural positions of the womb.

Q.—Doctor, is there a condition of the womb that is designated as retroflexion and retroversion? *A.*—Yes, sir.

Q.—Is either of those conditions represented on the charts which are before you? *A.*—Yes, sir.

Q.—What chart represents the condition? *A.*—Retroflexion is represented on Chart C; retroversion is represented on Chart E, the one below.

THE COURT:—They are just the opposite of anteflexion and anteversion?

The Witness:—Yes; they are just the opposite, with one rather important difference, and that is that in a retrodisplacement, either a flexion or a version, there is much more room for backward displacement than there is for a forward displacement; and we get, as pretty well indicated on Chart C, and the retroversion there is where the top of the womb comes down lower than the neck of the womb; whereas, an anteflexion, it presses against the bladder, and there is less room, and you get, as a rule, less marked displacement in the forward displacements than in the backward displacements.

Mr. T. J. Scofield: Q.—Doctor, have you an opinion, based upon the hypothetical question which you have already answered, and assuming that the ingredients of that medicine possess the powers indicated in that question, whether or not such a medicine will remove the cause which produced the retroflexion or the retroversion? *A.*—Yes, I have an opinion.

Q.—What is that opinion? *A.*—My opinion is that it will not remove the cause which produced it, and will not affect the condition that is so produced.

Q.—Have you an opinion, under the same hypotheses, as to whether such a medicine is indicated for retroflexion or retroversion, in all of the ordinary cases, the same as for falling of the womb? *A.*—Yes, I have an opinion.

Q.—And what is that opinion? *A.*—It is not indicated in those cases and could be absolutely without effect in those cases, in the way of changing the abnormal position.

Q.—Assume that when by hard work the womb and other organs are injured or misplaced, is the medicine mentioned in the hypothetical question which I have already propounded to you a cure for such a condition — have you an opinion as to that? *A.*—Yes.

Q.—What is that opinion? *A.*—My opinion is that it is not a cure for such condition.

Q.—Doctor, I call your attention to the following quotation under the heading of "Displacement of the Womb" in the Ladies Birthday Almanac, 1907, page 31: "When a woman has displacement of the womb, forward, backward, up or down, the patient is in a very serious condition. This medicine acts upon the womb itself and helps to pull up, or otherwise replace the displaced womb." And I ask you, based upon the hypothetical question which I have put to you and which you have answered, have you an opinion as to whether or not the language which I have read to you is justified, and whether the medicine will do what that language says it will do? *A.*—I think that in part of that statement it is true. There are certain forms of displacement as indicated there where a woman is in a very serious condition; but the latter part of the statement that the hypothetical medicine you have described will have any effect in changing those unnatural positions, in my opinion, is absolutely untrue.

Q.—Have you an opinion as to whether or not, under the hypotheses submitted, that this medicine will pull up the womb? *A.*—Yes.

Q.—What is that opinion? *A.*—My opinion is that it will not.

Q.—Doctor, in the various forms of misplacements, concerning which you have testified, tell the jury whether or not there is any regularity about the character of the misplacement and the position which the uterus assumes; that is, will it descend necessarily in a direct line, or may it fall on the right or left as it descends; or what variations are possible in the misplacement of the womb? *A.*—These different forms of misplacements that have been described, two forward displacements

and two backward displacements, are frequently not found as described and as illustrated by these charts, but there are combinations of two different forms of displacements in one. Perhaps the most common one is a backward displacement, together with a lateral displacement.

Q.—And by lateral you mean a— *A.*—That is, if this instrument (indicating with pessary), a pessary, is pointing forward; this is the front of the body, and this would constitute a retroflexion. We frequently have a retroflexion combined with a lateral bend; so that if in pointing now in that direction (indicating), instead of being straight back, it is partly back and partly bent over to one side, that is a retroflexion with a latter deviation to the left; and, with such deviation you will frequently have that displacement bound down by inflammatory adhesions which hold the uterus in that unnatural position. So that in that position the round ligaments which go toward the front—the left round ligament is somewhat relaxed, while the right round ligament is overstretched to practically twice its length, on account of the deviation to one side, in addition to the backward deviation.

Q.—In such cases of misplacement, what is the first essential thing, in order to cure the condition? *A.*—The first essential thing is to restore the displacement to its natural position—the uterus which is so displaced to its natural position.

Q.—How is that done, Doctor? *A.*—Well, that is done by mechanical measures. First, in the case I have illustrated, where it is bound down by adhesions, these adhesions must be broken up. There are different ways of accomplishing that. Sometimes it can be done by long continued soft elastic pressure.

The use of lamb's wool is very valuable in many such cases, because it is very different from absorbent cotton which was formerly used. Absorbent cotton becomes matted and has no spring to it. As soon as it is wet, it is practically solid; but lamb's wool, which will not absorb the moisture, may be packed in behind that sort of a displacement, and continue to exert its lifting pressure, and by that sort of massage treatment favors the absorption of the inflammatory exudate that has produced the adhesions, and, in time, will absorb those adhesions; so that a displacement may be gotten from that position (indicating with pessary), partly up into position.

Larger and more firmly applied lamb's wool is used, until in time the whole uterus, instead of being bound down by these adhesions, becomes somewhat movable, where a pessary can be applied to continue and keep up the work which the lamb's wool has done. That is one method, but there are a variety of methods.

When you get the adhesions broken up or destroyed, then there is an operation to shorten the two round ligaments, if it is a simple retroflexion, or, if it is a retroflexion and a deviation to one side, to shorten up the elongated single ligament to hold the uterus forward in its position—depending upon just the particular kind of retroflexion you have to deal with.

Q.—Doctor, have you an opinion as to whether or not such medicine as is described in the hypothetical question, as applied to a condition of a lateral displacement of the womb backward and lateral, or forward and lateral, would shorten one of the ligaments and lengthen the other at the same time, so as to permit the womb to resume its natural position in the median line? *A.*—That is on the assumption that the medicine might have an effect in shortening one round ligament, even on that assumption—

Q.—No. I say will this medicine that I have described shorten one round ligament and lengthen the other; have you an opinion as to whether it will or not? *A.*—Yes; I have an opinion.

Q.—What is that opinion? *A.*—I have an opinion that it will not shorten one or lengthen the other, or have any effect in the way of shortening or lengthening either one of them.

Q.—Have you an opinion, based upon the hypothetical question which I have asked you, as to whether or not the medicine therein described will break up the adhesions that bind a falling womb down, when those adhesions exist? *A.*—Yes.

Q.—What is that opinion? *A.*—My opinion is that it will not break up the adhesions or tend to remove or absorb the adhesions in any way.

Q.—You have spoken, at different times in your testimony, of mechanical means. As applied to these conditions, what do you mean by "mechanical means"? *A.*—Well, I mean measures that are—I don't know any better word that that to use—mechanical in their form; like a truss that is applied to an ordinary rupture, for instance; that is a mechanical measure for keeping the rupture, after being replaced—to keep it in place. The use of a pessary is a mechanical measure. The use of tampons is mechanical.

I used the term "mechanical" in contradistinction to medicinal, or any other form of measure.

Q.—You also use it, do you not, in contradistinction to any surgical operation— *A.*—Yes.

Q.—which may be necessary? *A.*—Yes.

Q.—Doctor, what is sterility? *A.*—Sterility is a term that is used to imply the inability of an individual to bear children—bear a child.

Q.—Do you agree, Doctor, with the statement that sterility and one of the common causes of sterility is displacement of the womb? *A.*—Yes. It is one of the causes.

Q.—If it be true that one of the causes of sterility is the displacement of the womb, based upon the hypothetical question which I have already propounded to you, have you an opinion as to whether that cause of sterility can be removed by the medicine described in the hypothetical question? *A.*—Yes, I have an opinion.

Q.—What is that opinion? *A.*—My opinion is that if the sterility is due to a flexion or bend of the womb which cuts off the caliber of the canal and mechanically interferes with the male seed coming in contact with the female ovum, that the medicine which you have described will have no effect whatever in curing that form of sterility.

Q.—What are other forms of sterility, if you know, Doctor, or causes which lead to sterility? *A.*—Well, there are a lot of causes for sterility. There are other forms of mechanical sterility, in addition to this one, that is, the flexion which cuts off the canal. There is a form of sterility that is due to what is technically known as stenosis, or a narrowing or closure of the canal that leads up into the womb.

Sometimes the outside opening, where the stem of the pear goes in is so small and pinhead in size that it prevents the male seed from passing in. That is another mechanical cause of sterility.

Sometimes that contraction is present at the inner neck—not the inner neck, but at what is called the internal os, at the neck of the womb, which is about an inch long, longer than the external opening and internal opening, to get into the body of the womb—and this contraction is occasionally found outside, and is sometimes found at the inner end of the neck of the womb.

Wherever there is any closure or obstruction to the passage of the seed up into the womb, it, of course, constitutes a cause of sterility.

On the other hand, in the uterus, where the fallopian tubes pass off to either side, as the results of inflammation in these tubes, that will affect the ovaries. An inflammation in a tube which is lined on the inside with mucous membrane, causes this mucous surface to swell and thicken, and as it thickens around the inside of a tube, it tends to close the tube; just like in the eustachian tube, where catarrh in the back of the head closes that tube, it produces deafness, because the air cannot pass in and out.

Where you have that closure, it interferes with the female ovum passing down into the body of the uterus, and consequently it cannot come in contact with the male seed. That is another mechanical cause of sterility.

There are numerous causes. The fact of a diseased condition of the ovary itself, which interferes with the proper exfoliation of the ripened ovum, an undeveloped ovary, an infantile ovary, which fails to develop at the period of puberty, is another cause; and a number of general diseases that are characterized largely by an anemic weakened condition of the patient. Perhaps a few common illustrations of that would be marked malaria with anemia, the early stages of tuberculosis or consumption, where anemia occurs; and in cases of the so-called hookworm disease; in pellagra; in syphilis; and in a number of constitutional diseases; in some of the poison troubles, like lead poisoning, etc.

In these cases the function of the ovary is so interfered with that it will not throw off a normal ripened ovum that could be impregnated.

Those are some of the causes of sterility.

Q.—Doctor, have you an opinion as to whether the medicine I have described in the hypothetical question, in addition to the use of the knee-chest position, will in time in most cases result in the cure of sterility? *A.*—Yes.

Q.—What is that opinion? *A.*—My opinion is it will not.

Q.—Do you know a form of womb trouble known as inversion? *A.*—Yes, sir.

Q.—Tell the jury what that is. *A.*—Inversion of the womb means where the womb is turned inside out. Instead of the fundus or top of the womb being up at the top—if you can conceive of taking hold of the inside of the womb and pulling it right down and out through its own neck, inverting it, just as you do the finger of a glove, when you take your glove off—you just pull the thing right out through the opening.

That is termed inversion. It occurs in the womb very rarely, but sometimes after confinement, where the afterbirth is extracted by pulling on the cord, before it is properly loosened by the womb contractions as it normally is—a person will take hold of the cord and pull on it, and sometimes it pulls the womb right down inside out.

We term that "inversion" of the womb.

Q.—In the treatment of that rare condition, Doctor, take the hypothetical medicine which has already been described in the hypothetical question which I have submitted to you and you have answered. I will ask you whether or not the taking of that medicine three times a day before the menstrual period, and during the period four times a day until stoppage of the flow, in addition to which laxatives are given and sitz baths taken and antiseptic douches used; I want to ask you whether or not you have an opinion as to whether such form of treatment will be effective in curing the condition of inversion of the womb? *A.*—Yes, I have an opinion.

Q.—What is that opinion? *A.*—That such treatment would be absolutely impotent to have any effect on an inversion of the womb.

Q.—What is inflammation of the womb, or fallopian tubes? *A.*—Well, inflammation is a condition which results from some infectious matter that gets into and upon the mucous surface which lines the womb; and, as a result of this irritation, it causes swelling and redness and heat and pain and fever.

Inflammation of these parts is practically the same as inflammation in every other part, so far as its pathology is concerned, but it acts differently in these pelvic organs on account of their being closed and inside of the body, than from what it does on the outside where the products of inflammation can freely escape.

So that inflammation is—the first step is a congestion, too much blood in these parts; and then the bacteria or micro-organism which produces the inflammation, bearing in character and intensity of action, determines the acuteness or the severity of the inflammatory process or its course and duration.

An illustration of that would be the gonococcus germ that I referred to. That is a virulent form of infection that produces that specific inflammation. But in all inflammations there is some micro-organism that invades these mucous surfaces, some comparatively mild that produce what is commonly known as simple catarrh, and others that are virulent, even to the extent of the gonococcus being virulent; so that the course of an inflammation in this closed organ, and its extent, the distance that it will travel up and the extent to which it will involve

the higher organs of the pelvic tract, depends, to a large extent, upon the virulency of the inflammation and upon how it is treated, with a view of permitting these parts to get rid of the products of inflammation. Where the uterus is perfectly straight and the so-called drainage is good, so that the discharge can get away easily, it has a much less tendency to extend higher up, because the drainage is perfect; but if it seals up the neck of the womb, so that the inflammation is above the inner neck, then the products of the inflammation, which is usually pus, or an increased amount of mucus, muco-pus, is locked up, and it tends to spread up into the tubes producing an inflammation in the parts higher up, and sometimes passes out through the tubes and gets into the pelvic cavity, causing what is known as pelvic peritonitis, an inflammation of the peritoneum which forms the lining of the pelvic organs.

Q.—Now what kind of a disease is such an inflammation, is it a germ disease or not? *A.*—Yes, it is a germ disease, but the germ varies in different cases. There are some of them that are comparatively mild in their action, just the same as the difference between the ordinary germ that we get in colds and the germ that we get in la grippe, which is more severe than the simple germ that we get in colds.

Q.—How is the germ introduced into the uterus? From the outside, or does it have its origin from the inside? *A.*—It is introduced almost invariably from the outside. It passes into the lower pelvic canal and works its way from that up, in through the vagina to the neck of the womb. It then invades the mucous surface which lines the neck of the womb, producing the characteristic and common discharge that is so frequently met with and known popularly among women, as "the whites," and technically as leukorrhea. It gets in in that way from the outside.

There are rare instances where the extension of inflammation from above downward, is known. That is where an appendix may have become diseased from the infection from the bowel, and an extension of that inflammation from the appendix spreads down to the ovary and tube. That is a very rare, but a possible situation.

Q.—Where the inflammation is in the womb and is extended to the fallopian tube, in what way does it get from the womb into the fallopian tube? *A.*—It gets to the fallopian tube by a direct continuation of the mucous surface which lines the womb and the tube. That is, the inside of the womb is lined by a mucous membrane, and the tube enters right into it, one on each side, so that the mucous surface is continuous with the womb itself and with the lining of the tube, so that the inflammation extends, if it extends up into the uterus, it is simply the progress of continuation along this mucous surface, it travels directly along that mucous surface and eventually into the tube.

Q.—Now, when the inflammation has passed from the uterus into the fallopian tube, what disease is thereby produced? *A.*—It is what is commonly termed inflammation of the fallopian tube, and what is technically known as salpingitis and where the inflammation forms pus that is locked up there it produces what is commonly known as pyosalpingitis, which simply means in plain English a pus tumor in the fallopian tube.

Q.—Now, assume, Doctor, a case of pyosalpingitis that has developed in the way which you have described, have you an opinion, based upon the hypothetical question which I have propounded to you, whether or not the medicine which was described in the hypothetical question, is taken three times a day, in addition to diet and baths and injections, and so forth, will in most cases restore the patient to health? *A.*—Yes, I have an opinion.

Q.—What is that opinion? *A.*—My opinion is that that statement is absolutely untrue and that it will not restore the patient to health in any case of pyosalpingitis.

Q.—What is an ovarian abscess? *A.*—It is simply one of the terminal stages of inflammation that has affected the covering of the ovary. That is, the terminal stage of inflammation—which I think I did not explain—means or implies that there are various stages. The inflammation may gradually subside if the germ is not persistent and virulent enough to keep it up, or it may terminate by the part breaking down and forming pus which, in these closed cavities, is locked up. Pus always travels in the direction of least resistance, following a fundamental law, and as there is no place for it to get out, it causes the covering of the ovary to swell and produces what is known as an ovarian abscess, just the same as in the tube it produces pyosalpingitis which is an abscess in the tube.

Q.—Doctor, I will ask you whether or not you have an opinion as to whether or not in the case of a large ovarian abscess, the hypothetical medicine, which I have already described to you, will cure the conditions? *A.*—Yes.

Q.—What is your opinion? *A.*—My opinion is that it will not.

Q.—What is menorrhagia? *A.*—Menorrhagia is excessive menstrual flow at the menstrual period.

Q.—Doctor, I will ask you whether or not it is true that menorrhagia may be a symptom of a large variety of abnormal conditions in the pelvic organs of a woman? *A.*—Yes, sir; that is true.

Q.—Have you an opinion, Doctor, as to whether or not the medicine which I have described in the hypothetical question, is a proper scientific treatment in all such cases? *A.*—Yes, I have an opinion.

Q.—What is the opinion? *A.*—My opinion is that it is not a scientific and proper treatment in all such cases.

Q.—What is amenorrhea? *A.*—Amenorrhea is a suppression, an absence rather, of the menstrual flow.

Q.—What are some of the causes which may produce amenorrhea? *A.*—Well, a large number of the causes that are mentioned before, under the head of sterility will cause amenorrhea. Those constitutional diseases which I spoke of, and which produce anemia, that is, a poor, watery condition of the blood, so that the individual has not enough red blood to afford this loss. In these cases you frequently get primary amenorrhea, and primary amenorrhea means that where the patient reaches the age when the menstrual flow should occur, it does not come on; whereas, secondary amenorrhea means the condition where the patient has had her menstrual flow and then, on account of some intervening cause, it stops. These are some of the constitutional causes which produce amenorrhea.

There are local causes which produce it in a way of obstructions to the outflow, such as the imperforate hymen or the closing up of the canal; or an undeveloped ovary, where there is no flow as the result of an undeveloped organ, which in that case is the real, underlying cause of the menstrual function, that is, to say, the ovary is. These are the general local and constitutional causes of amenorrhea.

Q.—Doctor, based upon the hypothetical question which you have answered, have you an opinion as to whether or not that hypothetical medicine will cure the causes which produce amenorrhea? *A.*—Yes.

Q.—What is that opinion. *A.*—My opinion is that it will not.

Q.—Doctor, returning for a moment to the subject of menorrhagia, I neglected to ask you what conditions will produce or cause menorrhagia? *A.*—There are so many conditions that will produce it! This is the excessive flow of the monthly period. Any of the displacements mentioned in Charts B, C, D and E, will cause menorrhagia. Any of the combinations of displacements will cause it. Any of the inflammations from the cervix up through the inside of the uterus, in the tubes, in the ovaries, in the pelvic cellular tissues will cause menorrhagia.

Then there are causes in the way of foreign growths that are very, very common as the cause of menorrhagia. In the first place we have a growth on the inside of the uterus that is known as polypi, little soft grape-like bodies that grow from the mucous surface, the diseased mucous surface and hang down into the organ, sometimes large enough so that, when a speculum is used in the vagina and neck of the womb or in the vagina, and the cervix or neck is exposed, one of these polypi will be seen coming right out of the neck of the womb, though it is attached on the inside at the top.

They bleed very freely and sometimes a regular little bunch of grapes, so to speak, like that is on the inside of the womb. That is a very common cause of menorrhagia.

Another, perhaps still more common cause is the development in the body of the womb, in the muscle itself, of a fibroid tumor or fibroid tumors, little tumorous growths, muscular growths, sometimes small and sometimes bigger than the womb itself; sometimes of enormous size, will grow in this muscle, and where such a condition exists the individuals almost invariably have menorrhagia.

The blood vessels supplying the womb are so enlarged under those conditions that, when the menstrual period occurs, with the existence of these morbid growths, the bleeding is often so very excessive that it has to be mechanically stopped.

Another common cause is the development of cancer at the neck of the womb. In the case of any of these morbid growths, or conditions, cancerous growths in the womb, diseased conditions of the mucous membrane, as well as quite a number of constitutional diseases, menorrhagia is produced.

Q.—Doctor, what is the history of cancer, such as you have described? Is it rapid or slow in progressing? *A.*—It is rather slow at first, and, as it develops it becomes more rapid and is, as a rule, fatal in 18 months.

Q.—In 18 months after— *A.*—After its original development, so that it cannot be eradicated. That is, cancer in any part of the body has a life history of approximately 18 months.

Q.—In the early stages of cancer of the womb, can it be cured? *A.*—It can be cured if it can be removed before it has invaded the surrounding parts. That is to say, cancer travels not by the blood vessels but by the lymphatics, the lymph channels which lead to the glands adjoining the parts.

Now, if cancer, by early examination can be discovered in the neck of the womb, where there has been a laceration say, with scar tissue formation, a lacerement and a confinement and some scar tissue formation—it is a suitable field for the development of carcinous growth. The neck of the womb is a common site for cancer to develop in woman. If the examination reveals that condition to exist, a piece of it is taken out and put under the microscope, and if it is discovered to be carcinous or cancer, complete extirpation of that neck of the womb, or, if necessary, if it has gone a little further, the whole uterus itself, before it has sent out what used to be called—and what is still good for the illustration—before it has sent out its roots, the invasion along these lymph channels, if it can be removed before that time, the disease can be cured.

But, if it goes on until it has invaded the lymphatic vessels and the neighboring glands it cannot be removed unless those glands and those vessels can be completely removed, which is often, especially in the pelvic region, impossible. Sometimes it can be done by a process of dissecting all the way down the arm, for instance, and taking the whole chain of glands, it can thus be completely removed even after it has gone further. But, in the uterus, unless it is done early, it cannot be successfully eradicated.

Q.—If I understand you then, delay is dangerous in connection with such a cancer? *A.*—Yes, sir; very dangerous.

Q.—Doctor, bearing in mind the various causes which you assigned as producing menorrhagia, and bearing in mind the hypothetical question which I have submitted to you, and which you have answered, will you tell us whether or not such a medicine, given three or four times a day, will cure the causes which produce menorrhagia? *A.*—Yes. In my opinion it will not cure the causes which produce it.

Q.—Referring to the question of cancer of the uterus, and its treatment, can the cancerous condition be determined or discovered in any other way than by examination? *A.*—No.

Q.—What are the manifestations which suggest such an examination to the physician?

Mr. Hough:—That is objected to if your Honor please. I think he has gone far enough into that.

THE COURT:—I do not think that is necessary.

To which ruling of the Court the defendants, etc., excepted.

Mr. T. J. Scofield: Q.—In what time, in a woman's life is she most liable to have cancer of the uterus?

Mr. Hough:—I object to that also.

THE COURT:—He may answer.

To which ruling of the Court the plaintiffs, etc., excepted.

A.—At about the age of the menopause or change of life.

Mr. T. J. Scofield:—Is it a frequent or infrequent thing at the menopause for cancer to develop? A.—It is a frequent thing.

Q.—I will ask you, Doctor, whether or not the disease known as hookworm, or the germs of malaria produce any functional derangements with relation to the menstrual function, and if so, what? A.—They produce amenorrhea, or scanty menstruation as a result of the profound anemia or poor quality of blood which those two diseases almost invariably bring about.

Q.—To correct that condition, what is the first thing necessary to be done? A.—The first thing to do is to cure the underlying cause of the anemia, upon which the menstrual disturbance depends.

Q.—What is the underlying cause? A.—That is to cure the malaria, or to cure the hookworm disease, which is producing the anemia.

Q.—Have you an opinion, based upon the hypothetical question which I submitted to you, and the medicine therein described, whether or not that medicine taken in any dosage, will kill the germs of malaria? A.—Yes, I have.

Q.—What is your opinion? A.—My opinion is that it will not.

Q.—Have you an opinion as to whether or not it will cure the germs of hookworm? A.—Yes.

Q.—What is your opinion? A.—My opinion is that it will not.

Q.—Doctor, what is dysmenorrhea? A.—Painful menstruation.

Q.—What is the cause of dysmenorrhea, or causes? A.—The causes are almost innumerable. They may be mechanical displacement, morbid growths, inflammation in any of the parts, constitutional conditions—a great variety of causes produce dysmenorrhea.

Q.—Have you an opinion whether or not the medicine mentioned in the hypothetical question will cure the causes which produce dysmenorrhea? A.—Yes.

Q.—What is that opinion? A.—My opinion is that they will not cure any of the causes that are either mechanical in the way of deformed or displaced conditions of the uterus; they will not cure any of the causes that are due to morbid growths; will not cure any of the causes that are due to the constitutional diseases that have been mentioned, and will not cure any causes other than the simple form of dysmenorrhea that might come as a result of a person getting her feet wet or taking some cold, causing a little temporary congestion of the uterus where a hot drink of any kind would have the effect of temporarily relieving it until Nature had naturally restored itself on account of its own recuperative power.

Q.—What is metrorrhagia? A.—It is the same thing as menorrhagia only it occurs not only at the menstrual period, but in between the periods. That is metrorrhagia means an excessive flow from the womb regardless of the menstrual period when it is so bad that it goes on for two or three or four weeks sometimes, so that the woman can hardly tell when her normal period is present.

Q.—What are the causes of metrorrhagia? A.—The same set of causes that I mentioned in reference to menorrhagia.

Q.—Referring to the hypothetical question again, I will ask you whether or not the hypothetical medicine taken three or four times a day, will cure the causes of metrorrhagia? A.—No, in my opinion it will not.

Q.—Doctor, what is meant by the term "puberty"? A.—Puberty is that period of a young girl's life when she is developing into womanhood, in this climate occurring at about 14 years of age, and it is the period at which her first monthly sickness shows and with that comes certain changes in the way of increased development of the reproductive organs, the breasts and so on, that develop and become more enlarged at that period and we call that period, "the period of puberty."

Q.—Doctor, will you tell us whether or not that is a natural, normal, physiological process? A.—Yes, sir; it is.

Q.—Referring to the hypothetical question, and the hypothetical medicine again, I will ask you to state whether or not you have an opinion as to whether every girl should take such a medicine as described in that question, at the time of puberty. A.—My opinion—

Mr. Leesch:—Have you an opinion?

Mr. T. J. Scofield: Q.—I say, have you an opinion? A.—Yes, I have an opinion.

Q.—What is that opinion? A.—My opinion is that she should not take that kind of medicine at puberty.

Q.—Why not, doctor? A.—Because puberty is a normal, physiological process that requires and calls for no form of medication at all. Second, because at that impressionable age in a girl's life, to give her an alcoholic preparation, which contains 48 drops of pure alcohol three times a day, is very harmful and endangers the rousing up of possibly latent tendencies in the individual; it causes excitation of the patient and the female organs generally, at a time that is very dangerous to young girls. For a variety of reasons, on account of the alcoholic stimulent that it contains, it would be a very harmful and dangerous treatment to use.

Q.—Doctor, have you an opinion as to whether or not such a medicine as I have described, containing 48 drops of pure alcohol to each dose, should be taken by every girl at the time of puberty, and that such medicine can never do her anything but good? A.—Yes, I have an opinion.

Q.—What is that opinion? A.—The opinion is that the statement is absolutely untrue.

Q.—You have already described the possible effects, as I understand it, of such a course of treatment? A.—Yes.

Q.—Doctor, referring to marriage, I will ask you whether or not you have an opinion as to whether or not the following statement is true and correct:

"The menstrual functions and nervous system are, as a result, very generally deranged at the time of marriage." Have you an opinion whether or not that is true? A.—Yes.

Q.—What is that opinion? A.—My opinion is that it is not true.

Q.—Upon what do you base the opinion, Doctor? A.—Well, for the reason that marriage is just as natural and normal a function in a woman's life as the development of puberty or any other normal, natural period in her life. It was foreordained and it is natural that a woman should be married. There is nothing in it that will derange her organs, though the possibility that some intercurrent disease may occur (as at any other period) exists. But that it will generally, and in all cases cause a derangement of her nervous functions and menstrual functions is absolutely true in my opinion, based upon my knowledge and experience.

Q.—You say absolutely—

(Last part of preceding answer read.)

A.—Untrue I mean.

Q.—Doctor, have you an opinion, as to whether or not all newly married women should take such a medicine as I have described, at the time of their marriage? A.—Yes.

Q.—What is that opinion? A.—My opinion is that she should not.

Q.—Why? A.—Because she does not need it. There is nothing in newly married life that requires any form of medicine, and above all a medicine that is a stimulating solution at a time when certainly, above all other times, there is no stimulant called for or required.

Q.—What is pregnancy? A.—Pregnancy?

Q.—Yes. A.—Well, that is the condition following conception, or the union of the male and female germ.

Q.—That is a perfectly natural physiological condition, is it not, Doctor? A.—Yes.

Q.—Now, what is your opinion, or have you an opinion as to whether or not a pregnant woman should use such medicine as I have described to you in the hypothetical question, during the whole term of pregnancy, and whether it is a fact that such medicine can never do anything but good at such times? Have you an opinion? A.—I have an opinion, yes.

Q.—Will you please state what that opinion is? A.—Well, my opinion is that it is not a fact that such a medicine should be used all through pregnancy, and it is my opinion that it is positively untrue that it could never do her anything but good.

Q.—Why, Doctor, do you reach that conclusion? Why are you of that opinion? A.—Because there are a great many conditions that may develop during pregnancy in a healthy woman, and disturbances of the functions of some of the organs as a result of pregnancy, where the use of such a medicinal solution would be positively harmful and dangerous. Among conditions of that sort and as a result of the pressure of the enlarging uterus as it passes out of the true pelvis into the false pelvis and up into the abdomen, where the pressure exists on surrounding organs, it sometimes interferes with their functions. Notably, the pressure backward on the kidney or the kidneys will quite often interfere somewhat, with the functions of the kidneys and produce a transient albuminuria where certain rest and certain dietary treatment should be always indulged in, and in anticipation of that condition we, as a rule, as a regular routine practice, examine the urine every week to see that there is no such complication present.

If such a complication should be present, where milk diet is indicated and required, together with rest and so on, such a medicine as described would precipitate the convulsions, and the so-called puerperal convulsions of eclampsia, where the woman was so affected. That is one illustration of a half a dozen different things where a medicine of that kind would not only do no good, but would do positive harm and would be dangerous to the woman, as well as to her ingrowing and developing child.

Q.—Would there be any possible effect of the alcohol contained in the dosage, given three or four times a day, through pregnancy, upon the unborn child? A.—Yes.

Q.—What would it be. A.—There would be a possible danger, not always present, if there is any latent inherited tendency to alcohol as there is in certain individuals, the use during the period of pregnancy of alcohol daily, even in small doses, would tend to make that tendency more marked in this unborn child when it came into the world. It would have a harmful and pernicious effect, the use of such a medicine, even if the mother were perfectly normal all through. There would be a danger of possibly developing that latent tendency in such a child.

Q.—Doctor, calling your attention again to the hypothetical medicine that I have referred to, I will ask you whether or not you have an opinion as to whether the use of such a medicine throughout pregnancy would make childbirth easier? A.—Yes, I have an opinion.

Q.—What is that opinion? A.—It would not have a particle of effect in that direction.

Q.—Why would it not have any such effect? A.—Assuming all the virtues that you have attributed to the ingredients of this medicine, to their very best possible capacity, it could have no effect whatever in making childbirth easy.

Childbirth depends upon the relation and size of the child's head to the female pelvis through which it has to pass. Certain things must develop and must occur. The uterine contractions must dilate and expand the neck of the womb in the first stage. In the second stage, the uterine

contractions must press this child down so that its head becomes engaged in the true pelvis and the surrounding structures gradually dilate. These physiological conditions must necessarily occur. There is absolutely nothing in such a mixture that would have a tendency to mitigate or alter or affect in any way any of those natural processes which invariably must occur in every childbirth.

Q.—Doctor, I will ask you whether or not, during pregnancy there is any tendency toward what we call Bright's disease? *A.*—Yes, that is the condition that I referred to under the heading of albuminuria on account of the pressure.

Q.—What is the effect of alcohol, 48 drops of alcohol, taken three or four times a day through a considerable portion of the period of pregnancy, what is the tendency of that in connection with Bright's disease? *A.*—The tendency is to favor its development, if there is such a tendency present in the individual. The avoidance of alcohol in any form should always be observed by any one who has any tendency to even congestion or even inflammation of the kidneys, which is Bright's disease.

Q.—If the use of alcohol under such circumstances should tend to the development of Bright's disease, what would be the possible effect upon that pregnancy? *A.*—Do you mean in a pregnant woman, or in any individual?

Q.—Yes, a pregnant woman. *A.*—Of course, it would thereby prevent the kidney from eliminating from the body its own natural poisons, which would accumulate in the blood of that individual on account of the inflamed kidney and the irritation caused by that self-produced poison in the blood, would act upon the nerve centers to such an extent as at first to produce a headache, and then the somnolent condition, then the convulsive seizure with contraction of the uterus and the premature expulsion of probably a dead child. That is the way these convulsions occur unless that condition has been anticipated and prevented by the urine analysis and by the proper sort of treatment which I indicated before.

Q.—As I understand you, you say, without such precautions, there is in some instances, a tendency toward Bright's disease, in pregnancy? *A.*—Yes, sir.

Q.—When there is such a tendency, would this medicine which I have referred to in the hypothetical question, and now designate as "the hypothetical medicine," would that be a medicine which would tend to encourage and increase that condition, or to suppress it? *A.*—It would tend to encourage it, and increase it. It would be a positive poison in such a condition to administer any medicine containing alcohol.

Q.—Have you an opinion, doctor, as to whether or not such a medicine as I have described in the hypothetical question, would have any effect upon the mil', supply of the mother, after her child had been born? *A.*—Well, I am not sure about that. It is a possibility that, if the milk supply was deficient, that a minute amount of alcohol might favor a greater supply—that is, certain malt liquors are sometimes used, and it might be of value. I really would not express an opinion as to whether it would be valuable or not. It might in certain cases, or it might not. It is on account of its alcoholic content; the other ingredients of course would not be indicated or called for.

Q.—If it had such an effect, to what effect would that be due? Would it be due—

THE COURT:—He has answered that. He says solely on account of the alcoholic content.

Mr. T. J. Scofield: *Q.*—Do you know what is meant by the term "change of life"? *A.*—Yes, sir.

Q.—What other names are applied to it? *A.*—Well, the menopause, or the climacteric periods.

Q.—About when does the change of life come in a woman's life? *A.*—It averages about 42 or 43 years, but may be two or three years early or two or three years or more later.

Q.—What is the duration of the time through which a woman passes before the menopause is complete? *A.*—Usually a number of years.

Q.—What is the menopause or change of life? *A.*—It is the time in a woman's life, when her sexual organs become inactive; where her menstrual flow ceases and where her child-bearing period is at an end.

Q.—Have you an opinion, Doctor, as to whether or not the hypothetical medicine that I have referred to, should be taken regularly on the first sign of the change of life, and its use continued throughout the whole period? *A.*—Yes.

Q.—What is that opinion? *A.*—My opinion is that it should not be used at that time, at any part of that period, and certainly should not be continued all through that period.

Q.—Why? *A.*—Because it contains the equivalent of 96 drops of whiskey, and each dose is an exhilarant that causes flushing of the face, and at that period, where a woman has regularly every month been relieved of a certain amount of blood, and that function ceases, one of the most common symptoms of the commencing of the change is a flushed condition of the face, a rush of blood to the head, a feeling of nervousness, a feeling of dizziness the very condition where the exhilarating and exciting effect of alcohol is positively contraindicated and where it should not be used. The very opposite medication, if any, is called for.

Q.—What have you to say as to whether or not the time of life this change is being produced makes women particularly or peculiarly liable to the formation of drug habits?

Mr. Hough:—That is objected to. I really do not see the point of that.

THE COURT:—State the specific kind, lead the witness if you want to. I don't recall anything in the pamphlet that advises the use of this, except during the period you have mentioned.

Mr. T. J. Scofield:—That is what I am speaking of, I am referring to the menopause.

THE COURT:—Well then, put that question specifically.

Mr. T. J. Scofield: *Q.*—Doctor, during the menopause, is there anything at that time, which would tend to produce within a woman a habit or tendency to a drug habit? *A.*—Yes.

Q.—Will you explain what you mean by that? *A.*—Well, I mean by that, that, at this period of life, where there is a change taking place in the circulation, and where almost invariably there is a set of nervous symptoms, a set of disturbing symptoms present, there usually develops in the individual a craving for something to counteract or disguise those symptoms. Drug forming habits are very apt to occur at that period; perhaps more at that period or during that condition in a woman's life, than at any other period, simply on account of this peculiar mental and nervous state that she is in owing to that change that is taking place in her circulation and its effect upon her nervous system.

Q.—Doctor, on page 38—

THE COURT:—In the term "habit" do you include the use of alcohol? *A.*—Yes, your Honor.

Mr. T. J. Scofield:—On page 38 of the Cardui Home Treatment Book, the following ambiguous language is used:

"Cancer is also greatly feared by many women. There is no doubt that the womb at this time is less able to withstand disease, and if the patient is affected, she is not unlikely to succumb to a local disease like cancer. But cancer is really a very rare disease, and other diseases under proper treatment with Cardui as a general tonic, will eventually disappear."

Have you an opinion, Doctor, whether or not the hypothetical medicine, such as I have described, will cause cancer to eventually disappear?

Mr. Hough:—That is objected to. The language clearly excludes cancer.

THE COURT:—I thought the language excluded that, Mr. Scofield—

Mr. Hough:—It clearly does.

THE COURT:—As you read it.

Mr. T. J. Scofield:—I do not think it does, if the Court please. I said in the question, "the ambiguous language."

Mr. Hough:—That don't make it ambiguous, your stating it.

Mr. T. J. Scofield:—No, I understand that it does not make it ambiguous, but it undertakes to lure a woman into a disregard of the possibilities.

Mr. Hough:—I object to this statement that counsel is making.

Mr. T. J. Scofield:—The possibilities of this cancer, by saying that it is a very rare condition.

THE COURT:—I will excuse the jury here for a few moments. Now read that statement again, Mr. Scofield, read that statement from the book.

Mr. T. J. Scofield:—(Reading) Cancer is also largely feared by many women. There is no doubt that the womb at this time—menopause—

THE COURT:—Is largely what? Feared?

Mr. T. J. Scofield:—Yes, feared. "Cancer is also largely feared by many women."

Mr. Hough:—Does it not say "greatly feared."

Mr. T. J. Scofield:—Not as I have it in my trial book here.

THE COURT:—That is immaterial.

Mr. Hough:—Go ahead.

Mr. T. J. Scofield:—Well, I will read it from the book. "Cancer is also greatly feared by many women. There is no doubt that the womb at this time is less able to withstand disease, and if a patient is affected she is not unlikely to succumb to a local disease like cancer. But cancer is really a very rare disease, and other diseases under proper treatment with Cardui as a general tonic will eventually disappear, so that after the change has occurred you will probably feel better than ever before."

THE COURT:—You may ask the witness whether cancer is a rare disease at that time, and if by the use of the hypothetical medicine the other diseases will disappear. It seems to me that is all that statement involves.

Mr. Walker:—He has already answered that to the effect that cancers were not rare at the menopause.

Mr. T. J. Scofield:—Well, my proposition is this: he has already said that, but, by the language which they use here, they undertake to say to the women, that the possibility of cancer is negligible, and they say to them, "Don't pay any attention to it. It is a rare thing."

THE COURT:—Well, this witness disagrees with that statement and has so told you.

Mr. T. J. Scofield:—I understand, but that is a part of the representations which they make in the literature, which they send out, and as a result of that sort of thing it is probably

true that many a woman has developed a cancerous condition that has led to her death

THE COURT:—That you can argue to the jury when the time comes. Now, I will excuse the lawyers for a few minutes.

(The immediately foregoing colloquy was had without the hearing of the jury, as indicated by the Court's remark, excusing the jury. At this point a recess of 10 minutes occurred, at the conclusion of which, and in the hearing of the jury, the following proceedings were had.)

Mr. T. J. Scofield: Q.—Doctor, I understand you to say that it is necessary to make a physical examination to accurately determine the character of the uterine displacement, is that right? A.—Yes, sir.

Q.—I wish you would assume that a woman is suffering from some form of uterine displacement, the exact character of which you do not know; that she complains a good deal of local irritation in the pelvis, with a feeling of weight and a bearing down sensation, with backache, and that these symptoms are more marked just before the menstrual period; she also suffers from a rather profuse leukorrheal discharge. In addition to this she has a number of general symptoms; she complains of being very nervous; she is easily tired out, does not sleep well at night, complains of a good deal of headache and pain in the back of the neck.

Without knowing the exact underlying condition which is producing these local and general symptoms, I would like to ask you whether such a medicinal solution as I have described to you in the hypothetical question, each dose containing 48 drops of pure alcohol, or the equivalent of 96 drops of whiskey, taken three or four times a day, would affect a case like this? A.—Yes, I think it would.

Q.—In what way will it affect it? A.—I think a medicine of that kind in such a condition would act as a sort of a bracer to a woman so affected. I think her sort of nervousness, as described in the hypothesis, under the influence of that much stimulant, three or four times a day, would be somewhat disguised. I think she would say she felt better under the influence of that kind of medicine, she felt braced up by it, and did not feel quite so nervous, and did not have quite so much backache while she was taking it. In that general way I think it would have the effect of bracing her up and disguising her symptoms, regardless of the underlying cause which produced it.

Q.—Doctor, I wish to ask you a hypothetical question in reference to a medicinal solution: Wine of Cardui. This solution is made from two herbs, which are derived from the vegetable kingdom. One of these ingredients (cnicus benedictus) is made from a weed or thistle, and that when used in the form of an infusion this substance has a bitter action upon the stomach. Also that it contains an amorphous bitter principle which in doses of eight grains is somewhat antiperiodic, that is, anti-malarial in action, and when an infusion of the whole herb is taken, hot and in large quantities, it is diuretic and diaphoretic in action, and also that it possesses some action as an hepatic stimulant. Assume also that when large doses of the bitter principle are taken internally it produces nausea, vomiting and intestinal irritation.

Assume that this medicine is described, and that the description is correct, as follows, in the National Standard Dispensatory:

"A simple bitter. It is also said to be an hepatic and urinary stimulant. It may be employed in atonic dyspepsia, especially if hepatic torpor exists, and like other bitters it has been successful in the treatment of mild malarial infections. Over-doses of its active principles sometimes produce nausea, vomiting, intestinal pain and diarrhea."

Assume that this drug is recommended in doses of from 20 to 60 grains, and in the medicinal solution I am asking you about consider it is used in doses of approximately thirty grains.

The other drug I want you to consider in this hypothesis is black haw or viburnum prunifolium, and regardless of your own personal experience with this drug, I wish you would assume for the purpose of this question that when taken in the ordinary and usual medicinal doses of from 30 to 60 grains it possesses a sedative action on the spinal nerve centers; that it lessens reflex excitability and irritability; that it acts as a sedative to the uterus and pelvic organs; that it is an antispasmodic, and that it possesses a bitter principle that is slightly tonic.

I wish you would assume further that in the solution that I am describing to you that each dose of this medicine contains extractives from three grains of this bark.

I wish you would assume further that the medicinal solution contains 20 per cent. of alcohol, and also assume it to be a fact that 20 per cent. of alcohol will not extract the characteristic principles of this bark.

Assume that the dose of this medicinal solution in one tablespoonful, and that it is to be administered three or four times a day.

Have you an opinion as to what physiological action this medicinal solution will exert when taken by the mouth into the stomach?

Mr. Hough:—One minute, if you have finished the question.

Mr. T. J. Scofield:—Yes.

Mr. Hough:—I object to the form of it. In the form of it it answers itself. He has assumed that there is nothing in there. It is not a proper question.

THE COURT:—You have told us a great many things that would happen.

Mr. T. J. Scofield:—Did the Court speak to me?

THE COURT:—I mean when you put the question, you were asking the witness to assume that it would have certain physiological effects.

Mr. T. J. Scofield:—No, I did not, your Honor.

THE COURT:—That was my impression.

Mr. Hough:—Well, more than that, your Honor—

Mr. T. J. Scofield:—No, I assume for the purpose of the question that cnicus benedictus is attributed to have certain effects.

THE COURT:—Yes.

Mr. T. J. Scofield:—That viburnum prunifolium (black haw) is assumed to have certain effects. Black haw in doses running from 30 to 60 grains; cnicus benedictus in certain doses. Then I take a medicinal preparation in which cnicus benedictus and viburnum prunifolium are used, and extract it in a certain way, limiting the dosage, the amount of viburnum prunifolium contained in each dose, not to from 30 to 60 grams, but to approximately 3 grains; cnicus benedictus not to 60 grains, but approximately 30 grains in 20 per cent. alcohol, and I ask him then the hypothetical question as to whether or not he has an opinion as to what the medicine would do under those circumstances, and of course alcohol in itself is a preparation which has more or less action, and is present in 20 per cent.

THE COURT:—Now what is your objection?

Mr. Hough:—There was another element to the question as propounded which Brother Scofield did not mention, and that was: You are to assume also that this does not contain any carduus benedictus or viburnum prunifolium, and I say that that question answers itself, and is an anomalous proposition. How can it be expected to exert any influence if he is to assume that there is nothing there?

Mr. T. J. Scofield:—Oh, there is no such assumption there.

THE COURT:—He submitted his missing link on his restatement of it.

Mr. T. J. Scofield:—There is no such assumption at all. There is this assumption in the case, that 20 per cent. of alcohol will not extract all the characteristic properties of viburnum prunifolium, but how much 20 per cent. of alcohol will extract I don't know.

Mr. Hough:—Well, you haven't shown that the witness knows that either.

Mr. T. J. Scofield:—I don't have to show that.

THE COURT:—He can answer that question by saying that he doesn't know.

Mr. T. J. Scofield:—I am asking him the question as to whether or not you will get the effects of either viburnum prunifolium or cnicus benedictus, if they have effect, from such a preparation?

THE COURT:—As I understand it, Mr. Scofield has taken these drugs separately and assumed that they had certain characteristics if given in certain doses. Then he combines them in a solution of 20 per cent. alcohol, and asks the witness what physiological effect a certain dose containing so much of the one and so much of the other would have on the—

Mr. Hough:—Now if he will ask that question I will not object to it. But that is not the question, as I understood it.

THE COURT:—That is what I understood it to be.

Mr. Hough:—Because he said: You must assume further that the carduus benedictus and the viburnum prunifolium are not in there.

Mr. T. J. Scofield:—No, I didn't say that.

Mr. Hough:—I will ask the stenographer to read that assumption. That is the effect of that statement, and of course the witness must say it would not have any effect.

Mr. T. J. Scofield:—Oh, well, I never said any such thing.

THE COURT:—That was not the way I understood the question.

Mr. Hough:—Well, that is the ground of my objection, and if it is not in there, I have no objection to the question. If the question is as your Honor understands it, I will withdraw the objection, but if the point that I make is in there, then I think my objection is good.

THE COURT:—Well, state to the witness then that that is not in the question, Mr. Scofield. Take it out, then we will be sure it is not there. But I do not recall that you asked the witness, after having emasculated both of these drugs, to tell what its effect was.

Mr. Hough:—That is exactly what he did.

Mr. T. J. Scofield:—If I made any such statement as that I am the worst surprised man you ever saw.

Mr. Hough:—If you will let me take the hypothetical question there I will mark it on there for you.

Mr. T. J. Scofield:—Now let me finish, or let me put another assumption there.

THE COURT:—Read the question as put, Mr. Reporter, and speak up so we will all hear.

Mr. T. J. Scofield:—Let me finish, or let me put another assumption there at the close.

THE COURT:—Are you going to supplement it?

Mr. T. J. Scofield:—Yes.

THE COURT:—Or ask another question?

Mr. T. J. Scofield:—No, just simply supplementing it.

THE COURT:—Well now, Mr. Reporter, read the question as put to the witness by Mr. Scofield.

(Question read as follows: "*Q.*—Doctor, I wish to ask you a hypothetical question in reference to a medicinal solution: Wine of Cardui. This solution is made from two herbs, which are derived from the vegetable kingdom. One of these ingredients (cnicus benedictus) is made from a weed or thistle, and that when used in the form of an infusion this substance has a bitter action upon the stomach. Also that it contains an amorphous, bitter principle, which in doses of eight grains is somewhat antiperiodic, that is, anti-malarial in action, and when an infusion of the whole herb is taken, hot and in large quantities, it is diuretic and diaphoretic in action, and also that it possesses some action as an hepatic stimulant. Assume also that when large doses of the bitter principle are taken internally it produces nausea, vomiting and intestinal irritation.

"Assume that this medicine is described, and that the description is correct, as follows, in the National Standard Dispensatory:

"'A simple bitter. It is also said to be an hepatic and urinary stimulant. It may be employed in atonic dyspepsia, especially if hepatic torpor exists, and like other bitters it has been successful in the treatment of mild malarial infections. Over-doses of its active principles sometimes produce nausea, vomiting, intestinal pain and diarrhea.'

"Assume that this drug is recommended in doses of from 20 to 60 grains, and in the medicinal solution I am asking you about, consider it is used in doses of approximately thirty grains.

"The other drug I want you to consider in this hypothesis is black haw, or viburnum prunifolium, and regardless of your own personal experience with this drug, I wish you would assume for the purpose of this question, that when taken in the ordinary and usual medicinal doses of from thirty to sixty grains it possesses a sedative action on the spinal nerve centers; that it lessens reflex excitability and irritability; that it acts as a sedative to the uterus and pelvic organs; that it is an antispasmodic, and that it possesses a bitter principle that is slightly tonic.

"I wish you would assume further that in the solution that I am describing to you that each dose of this medicine contains extractives from three grains of this bark.")

Mr. Hough:—There is the assumption that takes it out.

Mr. T. J. Scofield:—Just simply put in the word "all" there; "all the characteristic principles."

THE COURT:—It still would have to be changed.

Mr. T. J. Scofield:—What is that?

THE COURT:—It still would have to be changed. It makes no difference as far as this question is concerned, whether you say the 20 per cent. alcohol will not take the extractives out, or will not take all of them out.

Mr. Hough:—Not a bit.

Mr. T. J. Scofield:—Suppose, if the Court please, that that is the contention of the defendants in this case, and that it is based upon the evidence in this case, and that as a matter of fact, so far as the viburnum prunifolium is concerned, that the extractives from viburnum prunifolium are not contained, as a matter of fact, in this preparation, and the evidence for the defendants not only tends to show that fact, but shows it. There is then nothing left in the medicine excepting alcohol and cnicus benedictus, and if that is the preparation put upon the market, if you have followed, so far as this hypothetical question is concerned, the evidence as to the manner in which it is made, as to the amount of viburnum prunifolium that is used in the preparation of a dose of this medicine, and as to the manner in which it is extracted, then it may be absolutely true that the characteristic properties of viburnum prunifolium are not extracted and are not contained in this medicine, and that neither all nor any of them may be present, so far as that is concerned. Now that is the proposition.

Mr. Hough:—That still does not help the question, but I differ with Brother Scofield as to his interpretation of the evidence. His witnesses who testified upon that point testified hypothetically that if certain things were so, then certain extractives might not be in there, but they have not stated what extractives are not in there which are a part of black haw or carduus benedictus, so that there is no evidence that is positive evidence that the black haw and carduus benedictus which they say is in here is not in there in its medicinal strength.

But whether it is or not, this question is objectionable in the form in which they put it.

THE COURT:—I don't think there is any question about that.

Mr. T. J. Scofield:—This question is not objectionable, if the Court please, if it be based upon our theory of the case, and if supported by the testimony.

THE COURT:—But you have not done it, there is the difficulty.

Mr. T. J. Scofield:—Well, in what respect? I can't see in what respect.

THE COURT:—You have told this witness that so far as the viburnum prunifolium is concerned, that he may disregard it, in this question. You need not have mentioned it, because you tell him there is not in this solution enough of it to pay any attention to.

Mr. T. J. Scofield—I think that is absolutely true, and I think it is based upon the evidence in this case.

THE COURT:—Then why not eliminate it from the question? You are confusing the Court and the jury and this witness by putting something in there that need not be there.

Mr. T. J. Scofield:—The Court holds then that the witness cannot answer the question?

THE COURT:—I think that question is improper.

To which ruling of the Court the defendants, etc., excepted.

Mr. T. J. Scofield:—I wish to say, however, here, that, because it is unfair to make a statement of that kind, I think, in open court and in the presence of the jury, that it is not true that the only evidence which we have in this case to support the statement which I made is hypothetical evidence, as stated by Mr. Hough.

THE COURT:—Well, that would be a matter of argument when you go to the jury.

Mr. T. J. Scofield:—There is positive testimony on the proposition.

Mr. Hough:—That statement was drawn out by your statement, which was improper in the first place.

Mr. T. J. Scofield:—I am stating what the evidence in this case shows.

THE COURT:—Well, that would be a matter of argument to the jury.

Mr. Hough:—That would be argument.

Mr. Walker:—It being a divided opinion, your Honor, I guess there is no fraud either way.

THE COURT:—Is there anything further in direct examination here?

Mr. T. J. Scofield:—No, sir, there is nothing further here.

THE COURT:—You may cross-examine, Mr. Hough and Mr. Walker.

Mr. Hough:—I would like not to have an interruption in the cross-examination, and if counsel on the other side will put on some other witness tonight, and withdraw Dr. Leeming, we can go on with that other witness tonight and start in with the cross-examination at the next session.

THE COURT:—All right.

Mr. T. J. Scofield:—What is the proposition here?

Mr. Hough:—I said I would prefer not to go on this evening with the cross-examination of Dr. Leeming.

THE COURT:—He would have but twenty minutes for his cross-examination now, and then we would suspend until Monday morning. Perhaps you have some short witness you can put on this afternoon.

Mr. T. J. Scofield:—That is very agreeable to us, if the Court please, and we have one or two witnesses that I would like to dispatch this evining, if we can do it, short witnesses.

THE COURT:—Well, we will do the best we can to help you.

Mr. T. J. Scofield:—Very well. Be back Monday morning, Doctor.

THE COURT:—I noticed that one of the witnesses whom, by special dispensation we let go on the stand yesterday so he could get away has not gone home, but is here today, so I am not particularly interested in these witnesses that want to go home.

Mr. Walker:—That was Dr. Byrd.

THE COURT:—Yes.

Mr. T. J. Scofield:—I will say this to your Honor: I requested him to stay, after Court was over last night, because I thought I might want to use him again.

(Dr. Leeming was thereupon excused.)

TESTIMONY OF DR. C. W. CASTNER

Dr. C. W. Castner was called as a witness for the defendants.

DIRECT EXAMINATION BY MR. WALDO

Dr. C. W. Castner testified that he lives in Terrell, Cochrane County, Texas, about 37 miles east of Dallas. He has been in practice for about eight years and is at present assistant superintendent of the North Texas State Hospital for the Insane. He has had experience with Wine of Cardui in the course of his professional treatment of patients.

Q.—In your own language, and in as short a manner as possible state to the Court and the jury what that experience was, confining yourself exclusively to what you know of your own knowledge? *A.*—I call to mind just now a lady about 27 years of age who, in 1912, lived near Rockwall, Texas. This lady consulted me, stating that she had a suppression of the menses, and as a part of the clinical history of her case I learned that about four years previous she had been suffering with menorrhagia, and that after this trouble had continued for two years she was operated upon for the trouble after she had failed to get relief from Wine of Cardui.

Q.—How long at that time had she been taking Wine of Cardui, if she told you? *A.*—About two years. After the operation she told me, as a part of the continuation of the clinical history, that she had been entirely relieved of the menorrhagia, and that her periods had been regularly established. Before she had had the operation she was practically bedfast all the time for a period of four or five months. After the operation, of course, she regained her health, and got up on her feet, so to speak, and in her enthusiasm to get back towards her household and other duties she did too much physical work, and about twelve months after the operation she had resumed the use of Wine of Cardui, she said, because she had remembered when she was taking it before she had this operation, that it had an exhilarating effect, and made her feel much better when she was tired and nervous, and she used it for that purpose solely.

At the time she consulted me for suppression of menses, after an examination to determine the causes I diagnosed the trouble as being from or superinduced by anemia due to an attack of malaria of about seven or eight months' duration, at which time off and on she had been having chills, as that is a condition involved in malaria, and she had continued taking Wine of Cardui during this time, and in increasing doses, and to my own certain knowledge on two occasions I saw the lady take Wine of Cardui from the bottle, just turn the bottle up and take it, and at one time at least a third of a bottle. And the suppression of menses came about while she was taking this remedy.

Q.—Do you know what caused the suppression of the menses? *A.*—Sir?

Q.—Do you know what caused, in that patient, the suppression? *A.*—Yes. My diagnosis was confirmed by giving an antimalarial treatment, and the reestablishment of the periods came about on her leaving off the Wine of Cardui.

Q.—Do you make that statement from your examination of the patient? *A.*—Yes, sir.

Q.—Now, if you know how much she took at a dose, will you state to the jury? *A.*—Well, I know by seeing her taking that much that she would take at one time at least a third of a bottle. At the other time I should judge that she had taken probably a fifth or a sixth of a bottle, and she told me that she frequently drank a half a bottle, because it made her feel better.

Mr. Walker:—I object to that statement and move it be stricken out.

THE COURT:—What was the matter that was objected to? Was this during the consultation, for medical purposes?

Mr. Walker:—No, he was telling what he had seen the witness do, and I don't object to that, but I do object to telling what he was saying in his last statement that—

THE COURT:—I heard that. He may tell what he saw the witness do, but he cannot tell what she was doing, except during the professional relation.

Mr. Walker:—That is right.

Mr. Waldo: *Q.*—Now eliminate anything that this patient told you, other than what she told you when she was giving you the history of her case. *A.*—Well, she made that statement when she was giving me the history of her case.

Q.—The statement that you have just referred to? *A.*—Yes, sir.

Q.—That she drank from a third of a bottle to a half of a bottle at the time? *A.*—Yes, sir.

Q.—What became of her? *A.*—Well, when I moved away from the community she was still living there. I am not living in that community now. She is probably still living there yet, around Rockwall, Texas.

Q.—Did she tell you what she was taking the Wine of Cardui for? *A.*—Well, she said just because she felt sort of tired and nervous; she commenced it for that, because she felt a little tired and nervous, and remembered that when she was taking it before the operation it would disperse this feeling, and make her feel better, and brace her up, and make her forget about being tired and overworked.

Q.—And you say you diagnosed her case as malaria? *A.*—Yes.

Mr. Walker:—Judge, I didn't make the objection at the beginning of this testimony, because I understand that it is preserved all the way through?

THE COURT:—Yes.

Mr. Waldo:—Dr. Castner, have you ever been connected with any institution for the treatment of alcoholics and dipsomaniacs? *A.*—Yes, sir, I have been connected with two.

Q.—In relation to your connection with institutions of that character, have you ever had any experience with Wine of Cardui? *A.*—I have.

Q.—And state to the jury what that experience was. *A.*—Well, I will state what specific cases I have had dealings with. In 1914 while medical director of a sanitarium in Dallas, Texas, specializing in treatment of drug and alcoholic addicts, a man came to us—

Q.—In connection with any institute? *A.*—Yes, sir.

Q.—What institute? *A.*—The Keeley Institute at that time.

Q.—Go ahead.

The Witness:—I will ask your Honor if I may hand the names of the patients in this institution to the attorneys.

THE COURT:—You may hand the names to the lawyers; you need not give them publicly.

The Witness:—This man came to us, and after questioning him I determined that he was what we classify as a periodic drinker, that is, four or five times each year he would get on a periodical spree and stay under the influence of alcohol anywhere from three to four weeks without ever getting out from under its influence. On this particular occasion when he came to us he had been on a cattle ranch in some of the Western Texas counties—I think he said forty miles from the nearest point where he could obtain liquor—and was on no railroad point at all, and stated to me facts and statements which were at that time—that night that he came in, about 9 o'clock—put down on a specially prepared blank for that purpose, of preserving records of his statements; that he had been on an exclusive Wine of Cardui drunk for three weeks, drinking not less than three bottles in any one day, and sometimes he got so drunk he didn't know how many he drank, and in that condition we talked the matter over, and I had taken his statements which were in the first blank of a four-page especially-prepared folder. We made a permanent record. And during the time we were talking—his brother came with him—during the time we were talking and deciding the matter, he asked his brother to hand him his grip. He said: "I think I have got one more full bottle, and inasmuch as I paid for it and brought it along, and it will be the last, why I might just as well drink it up."

Naturally his brother and I both remonstrated with him, but with little or no effect, and he just would have a drink. He said if he would take that last drink—if we would let him drink, drink that, take the last drink, why, he would be a good patient, and become our patient.

In this grip he had about a third of a bottle which he had been drinking out of, which he handed over to me. He had taken a new, unopened bottle out of its original carton, and I removed the cork for him, just more as a matter of wanting to see him drink than anything else—I didn't think he would drink very much—but he drank, I guess within five minutes, two-thirds of the bottle, and gave me the balance.

However, during the night, I judge about 2 o'clock, early morning, I was called to his room, and he said he would like to have another drink. I told him, well, I believed at this time I would give him a drink of whiskey. He said it didn't make any difference to him, if I would only give him a drink of cheap whiskey, he would take it just the same as any other. I told him I had some pretty good whiskey, and I gave him a drink of the Institution whiskey.

In the morning, after breakfast, when his brother, himself, and I were in the office consulting over the matter, for him to take the treatment, he had rather sobered up, and the matter had been driven into his mind just where he was, and he was rather reluctant to take the treatment. And down in the city at that time were other institutions claiming to give a cure in from three to five days, while ours was four weeks. And they were cheaper, too.

Mr. Walker:—I object to this talk, your Honor, I don't think all this talk should go in.

THE COURT:—I think we are getting away from—

Mr. Walker:—I let him go along, but I think I ought to object now.

THE COURT:—He has been rambling on, but nobody seemed to object.

Mr. Walker:—Well, I made the general objection, and I supposed it applied to all this, your Honor, and—

THE COURT:—The general objection does not hit the special objection that you should make.

Mr. Walker:—No, it doesn't hit the hearsay, but I thought he would get through some time, so I let him go.

The Witness:—Well, what I wish to say is that that was made a part of the record which would have been made a part of the permanent record had he stayed with us.

Mr. Walker:—I object.

THE COURT:—Yes, go on to another question.

Mr. Waldo: *Q.*—The circumstances which you have just recited, as I understand you, occurred in the Keeley institute at Dallas, Texas? *A.*—Yes, sir, 1914.

CROSS-EXAMINATION BY MR. WALKER

On cross-examination, the witness testified that his position in the North Texas Hospital for the Insane is a political one. He has held it since June, 1915. He received a letter concerning Wine of Cardui suit from Dr. Holman Taylor, Fort Worth, Texas, secretary of the Texas State Medical Society. He also received a letter from Dr. Heizer about the first of November, 1915. He met Dr. Heizer at the

Southern Medical Convention, in Dallas, Texas, November, 1915. He came to Chicago from Terrell, Texas, alone. He testified as to the term of his service with the White Sanitarium, Dallas, Texas, and with the Keeley Institution.

He testified regarding the patients mentioned, saying:

Q.—What was the name of the woman? *A.*—Mrs. S. I don't know her first name, or her husband's name.

Q.—Well, did you know her name at the time she visited you? *A.*—I probably did, but I don't remember it now.

Q.—Well, did you have records that showed her name, or books of your own? *A.*—I probably did get them. I don't know.

Q.—Did you have her in mind when you were talking to Heizer last November? *A.*—Yes, sir.

Q.—Well, why didn't you look up her name so we could get her? *A.*—I couldn't tell you. I don't know.

Q.—What? *A.*—I don't know.

Q.—Where did you say she lived, when you knew her in 1912? *A.*—Rockwall, Texas, about five miles north—Rockwall, Texas.

Q.—Now, when she came to see you she had already been operated on? *A.*—Yes, sir.

Q.—Did you perform any operation on her? *A.*—I did not.

Q.—You didn't take out any of her womb and test it in a solution of Wine of Cardui? *A.*—No, sir.

THE COURT:—He said he didn't operate on her at all, Mr. Walker.

Mr. Walker: *Q.*—Well, was her womb there when she came to you?

Mr. T. J. Scofield:—That is objected to. It doesn't make any difference whether it was or not.

Mr. Waldo:—That is improper. That reference is improper.

Mr. Walker:—What reference? Well, there is no pending question.

Q.—When you made the examination did she have a womb? *A.*—She did.

Q.—Did she have any of the other organs, ovaries, fallopian tubes? *A.*—So far as I could tell.

Q.—Well, could you tell from an examination that you made what the operation was? *A.*—I presume, from what she told me, and from what I found, that it was polypi of the uterus.

Q.—That would be internal? *A.*—Yes, sir.

Q.—And what was the complaint that she told you she had before she had the operation? *A.*—Menorrhagia.

Q.—Did she have amenorrhea at any time in her history at all, either before or after the operation? *A.*—No, sir; not only when she consulted me.

Q.—Then after the operation she took Wine of Cardui? *A.*—About a year after the operation.

Q.—What did she take it for then? Menorrhagia? *A.*—Just for the exhilarating effect.

Q.—She told you that she took it for the booze? *A.*—Yes, sir, in a manner.

Q.—Well, didn't you say that after the operation she had menorrhagia again? *A.*—No, sir, not that I remember. Her menses were established.

Q.—What did she come to you for? *A.*—For suppression of menses.

Q.—Oh, then she had suppression? *A.*—Yes, sir.

Q.—After the operation? *A.*—About a year and a half afterwards.

Q.—She had menorrhagia before? *A.*—Yes, sir.

Q.—And suppression afterwards? *A.*—About a year and a half after.

Q.—How long had she—did she say she had had suppression before she came to see you? How long did she say? *A.*—About five or six months.

Q.—Over what length of time did she come to see you? *A.*—Well, she always came to my office, she came about—

Q.—Well, over what length of time? *A.*—About four weeks continuously, that is, about twice a week, and then I saw her a couple of times after that, probably within two or three months.

Q.—Did you give her any treatment yourself? *A.*—Yes, sir, I gave her an antimalarial treatment, and tonic.

Q.—Oh, you treated her for malaria? *A.*—Yes, sir.

Q.—And she had amenorrhea at that time? *A.*—Yes, sir.

Q.—Now was there any retroflexion or retroversion at the time you examined her? *A.*—No, sir.

Q.—Her womb was in the normal condition? *A.*—Yes, sir.

Q.—No dysmenorrhea? *A.*—Sir?

Q.—No dysmenorrhea? She made no complaint of that? *A.*—No, no complaint of it.

Q.—How many times did you treat her? *A.*—Well, outside of prescribing the original treatment, and then seeing her about twice a week for three or four weeks, that consisted of the treatment.

Q.—Just the prescription? *A.*—Yes, sir.

Q.—And seeing her for three or four weeks? *A.*—Yes, sir, she would come to my office.

Q.—No necessity for making anything but the first examination? *A.*—I didn't deem it so.

Q.—When was it you treated this woman, what year? *A.*—1912, in the fall of the year.

Q.—1912? *A.*—Yes, sir.

Q.—Where were you then? *A.*—I was located at Lavon, Texas.

Q.—And where did she live? *A.*—She lived about four miles south of Lavon, about five miles north of Rockwall. Her post office was Rockwall.

Q.—R-o-c-k-w-a-l-l, is that the way you spell the last? *A.*—R-o-c-k-w-a-l-l.

Q.—Texas? *A.*—Yes, sir.

Q.—Do you know what her maiden name was? *A.*—I do not.

Q.—And you don't know, of course, whether she is there now or not? *A.*—No, sir, I left the community. I don't know.

Q.—Now, the man that you treated, that case with Wine of Cardui in his grip, and came with his brother? *A.*—Yes, sir.

Q.—You found out that he was a Texas ranchman? *A.*—Yes, sir.

Q.—Forty miles from whiskey? *A.*—That is what he said.

Q.—And he was a fellow that was in the habit—a periodical drunkard, is that right? *A.*—He so stated, yes, sir.

Q.—Well, one of the kind that goes and gets drunk intermittently, runs along without drinking at all for a number of months, or weeks, as the case may be, and then takes it all out at once? *A.*—Yes, sir.

Q.—Down to almost tremens, isn't that right? *A.*—Yes, sir.

Q.—That is the class? *A.*—Yes, sir.

Q.—They are one of the worst kind that you alcoholic professors have to treat, isn't that right? *A.*—Yes, sir.

Q.—And they are fellows that ultimately die, when they do die, of tremens? *A.*—They frequently die of tremens.

Q.—He belonged to that class that go into tremens? *A.*—Yes.

Q.—That was the type of booze fighter that he was, wasn't it? *A.*—Yes, sir.

Q.—What was his name? You are going to give us that name privately? *A.*—Yes, sir, I will give you the name.

Q.—And will you also be kind enough to give us the name of his brother? *A.*—Yes, sir.

Q.—And his residence? *A.*—Yes, sir, I will.

Q.—You have no objection, I take it now, to telling where either of them live? *A.*—They came from San Angelo, Texas, to Dallas. That is the only address they gave.

Q.—They gave you San Antonio? *A.*—San Angelo, Texas.

Q.—San Angelo, Texas? *A.*—Yes.

Q.—And what was the county in which they said their ranch was in Texas? *A.*—I don't remember.

Q.—They were forty miles from what town? *A.*—I believe they said San Angelo.

Q.—Did they give the name of the ranch? *A.*—If they did I don't remember.

Q.—What was the cure that you gave him, if you recall? *A.*—He didn't stay to take the treatment. He stayed over night.

Q.—Did you give him any treatment? *A.*—No, sir.

Q.—He stayed one night? *A.*—Yes, sir.

Q.—What percentage of alcohol is there in the whiskey that you use at that institution? *A.*—I don't remember. We used different brands.

Q.—Well, ordinarily how much alcohol is there? *A.*—How much?

Q.—Fifty per cent, isn't there? *A.*—Forty to fifty.

Q.—Fifty per cent., isn't there? *A.*—Forty to fifty, approximately.

Q.—Yes. You said, as I understand you, that you would give him some whiskey in the morning. Was it the next morning? *A.*—About 2 o'clock.

Q.—Two o'clock in the afternoon? *A.*—Two o'clock in the morning is when he called for drink.

Q.—Oh, he was sleepless, I suppose? *A.*—Yes, sir.

Q.—Like the ordinary dipso on the verge of delirium, is that right? *A.*—Yes, sir.

Q.—And at 2 o'clock in the morning in that condition he said he didn't care whether you gave him Cardui with 20 per cent. of alcohol, or whiskey with fifty per cent, is that right? *A.*—He said if we had cheap whiskey he would just as soon have one as the other.

Q.—Cheap whiskey, that means young whiskey, or less alcohol, as you understand it? *A.*—Well, it might be both.

Q.—That is, there would be more fusel oil in the cheap whiskey than there would be in the old, in the decent whiskey, the decent drink, isn't that right? *A.*—Yes.

Q.—He wanted "rotgut" and when he couldn't get that he would take Cardui, is that right? *A.*—Well, I can't say.

Q.—Mr. Witness, you understand the term I mean by "rotgut," don't you? *A.*—I think so.

Q.—And when he called for cheap whiskey you understand that he preferred rotgut whiskey, that kind, isn't that right? *A.*—Well, he said if we did have cheap whiskey.

Q.—If you did have cheap whiskey, or rotgut whiskey, is that right? *A.*—He would just as soon have the Cardui.

THE COURT:—He mentioned only cheap whiskey.

Mr. Loesch:—He never mentioned "rotgut."

Mr. Walker: *Q.*—Well, do you understand what is generally known as the common, ordinary barrel-house whiskey? *A.*—I think so.

Q.—What is the treatment down there? What do you give?

Mr. Scofield:—I object to that. That is a secret formula.

Mr. Walker:—I don't want that. I don't want the secret formula.

Q.—But did you give him whiskey?

THE COURT:—What is the difference what they give at this sanitarium? The man didn't stay there.

The Witness:—The man didn't stay there.

THE COURT:—It certainly is not cross-examination.

Mr. T. J. Scofield:—No.

Mr. Walker:—All right, that is all.

An adjournment was taken until Monday, April 10, 1916, at 10:30 a. m.

(To be continued)

Association News

THE ANNUAL SESSION

Announcement of Railroad Rates

The Committee on Transportation and Place of Session makes the following announcement concerning rates, time limits and stop-over privileges for railroad tickets to Detroit which have been offered by the various passenger associations for the coming annual session:

Central Passenger Association.—Two cents per mile in each direction, but in no case more than summer tourist fares. Signature form of tickets will be sold June 10, 11 and 12, final return limit to reach the original starting point not later than midnight, June 20. A joint tariff authorizing fares for the annual session of the Association from points in the Central Passenger Association territory is now being compiled.

Trunk Line Association.—Two cents per mile in each direction, going and returning via same route only; tickets to be sold and good, going, June 10-12, and returning, to reach the original starting point not later than June 20.

Southwestern Passenger Association.—Two cents per mile in each direction for round trip. These tickets will be on sale from June 1 to September 30, with return limit to October 31. The exact fares can be obtained on application to the local agent.

New England Passenger Association.—Two cents per mile in each direction, short line mileage, going and returning via the same route only and over which one-way tickets are regularly sold—one and one-half westbound differential to apply. Tickets to be sold and good going June 10-12 and returning to reach original starting point not later than midnight of June 20.

Western Passenger Association.—The lines members of the Western Passenger Association have individually announced that for the annual session of the American Medical Association, they will institute and participate in the following fares and arrangements: Double the current one-way I. C. C., basing fares from a selected number of points in Western Passenger Association territory to Chicago, Peoria or St. Louis, not to exceed authorized summer tourist selling fares to those points, added to the fares tendered therefrom, such fares to be announced later. From points in Illinois, also from Bellevue, Burlington, Clinton, Davenport, Dubuque and Keokuk, Iowa, and from Hannibal, Mo., and St. Louis, tickets to be sold June 10-12, inclusive, with final return limit to reach original starting point not later than midnight of June 20. From other points in Western Passenger Association territory, tickets to be sold June 9-11, inclusive, with final return limit to reach the original starting point not later than midnight of June 21, 1916. Tickets to be limited for going passage commencing date of sale and for a continuous passage in each direction. Tickets are to be validated by the agent of terminal line at Detroit.

Eastern Canadian Passenger Association.—The rate quoted is one-way ordinary first-class fare and one-third, plus 25 cents, for the round trip. Tickets may also be issued at Montreal to Detroit and return, rail to Detroit and return to Toronto or Kingston, thence steamer to Montreal, at a through fare of $22.50.

In most instances, the foregoing reductions apply only from principal stations where tariffs are on file and through tickets are in stock. From other stations, a notice of not less than forty-eight hours should be given the ticket agent in order that he may obtain from the general passenger department of the road interested the ticket desired and a quotation of the exact rate. The committee repeats the suggestion it has made each year: Those planning to attend the Detroit session should consult their local passenger agent in order that they may receive definite information concerning the routes, stop-over privileges and fares. In addition, these agents will be able to give information concerning circuit routes which will permit those attending the meeting to arrange whatever side trips they may desire to make in connection with the journey to Detroit.

AMERICAN MEDICAL SPECIAL TRAIN CHICAGO TO DETROIT

A special train, to be known as the American Medical Special, has been arranged by the Michigan Central Railroad to leave Chicago at 11:55 o'clock Monday night, June 11, which is considered a most convenient schedule for physicians and others of Chicago and those desiring to travel via Chicago. This will be a solid sleeping car train, modern all-steel Pullman sleepers, including drawing room and compartment cars, arriving in Detroit at the new Michigan Central passenger terminal at 7:30 a. m.

In addition to this special train, the Michigan Central operates other fast daily trains on the following schedules:

Leave Chicago	9:05 a. m.	Arrive Detroit	3:35 p. m.
Leave Chicago	10:30 a. m.	Arrive Detroit	5:55 p. m.
Leave Chicago	12:30 p. m.	Arrive Detroit	6:55 p. m.
Leave Chicago	3:00 p. m.	Arrive Detroit	10:35 p. m.
Leave Chicago	5:40 p. m.	Arrive Detroit	12:01 a. m.
Leave Chicago	6:10 p. m.	Arrive Detroit	12:45 a. m.
Leave Chicago	10:00 p. m.	Arrive Detroit	6:45 a. m.
Leave Chicago	12:05 a. m.	Arrive Detroit	8:00 a. m.
Leave Chicago	3:00 a. m.	Arrive Detroit	10:30 a. m.

All these trains carry sleeping cars, parlor cars, day coaches and dining cars.

From Chicago the fare will be $11 for the round trip, tickets good on all trains, on sale June 10, 11 and 12, returning June 20. From points west of Chicago, tickets will be on sale commencing June 1, limited thirty days for return, at proportionate low round-trip fares. The special train from Chicago will be accompanied by a railroad representative to look after the comfort of the party.

For sleeping car reservations and other information address Mr. C. C. Clark, General Agent Passenger Department, No. 228 South Clark Street, Chicago; telephone, Wabash 4200.

J. RAWSON PENNINGTON, Chairman.

Correspondence

Mitral Stenosis with Radial Pulse Difference

To the Editor:—The report of a case of mitral stenosis with radial pulse difference and left recurrent laryngeal paralysis by Guttman and Neuhof (THE JOURNAL, Jan. 29, 1916, p. 335) raises some questions in my mind.

Why should encroachment on the aortic lumen have produced inequality of the popliteal pulses? One would expect these two arteries to be equally affected by pressure on the aorta. The authors also speak of a "fresh pericarditis" after three weeks. Why say "fresh"? We all know that the pericardial friction rub will persist at the base of the heart for a long time, owing, no doubt, to the proximity of pericardial surfaces at this point. We find, further, the statement that there was an "enlarged left ventricle." The physical examination revealed the evidence of a pure mitral stenosis. We all know that under such circumstances there is enlargement of the left auricle and compensatory hypertrophy of the right side of the heart. Any one who has seen postmortems in cases of pure mitral stenosis can bear witness to the fact that the left ventricle is usually found atrophic from disuse. There is a diminished systolic output in these cases which gives rise to the small pulse of mitral stenosis. Would it not, then, be more reasonable to assume that the left ventricle was dislocated to the left by the greatly enlarged right ventricle, just as, in some cases of aortic insufficiency with cor bovinum, the right ventricle is dislocated to the right by the greatly enlarged left ventricle?

Why not, then, accept the factor mentioned by Kraus rather than "discredit" so keen an observer and so able a clinician? Probably all three factors, the enlarged left auricle, the large right ventricle and the dilated pulmonary artery, are responsible for the pressure symptoms in these cases.

It might be of interest to add that other pressure symptoms have also been described. Kahler (*München. med. Wchnschr.*, 1912, lix, 1517) has described encroachment on the lumen of the left primary bronchus, and mentions instances in which

he has made the diagnosis of mitral stenosis by the bronchoscope. Kovacs and Stoerck (*Wien. klin. Wchnschr.*, 1910, xxiii, No. 42, abstr., *München. med. Wchnschr.*, 1910, lvii, 2314) have described compression, thinning of the anterior wall and dislocation of the esophagus due to pressure of the enlarged left auricle.

E. DAVID FRIEDMAN, M.D., New York.

Bureau of Mines and the First Aid Movement

To the Editor:—In connection with the propaganda for the spread of the first aid movement, which is now being fathered by a committee of which Dr. Joseph C. Bloodgood of Baltimore is the chairman, practically no credit has been given to the most active agent in this field—the United States Bureau of Mines.

For a number of years the Bureau of Mines has had specially trained groups of men living in cars equipped to fight mine fires and other mine catastrophes stationed at strategic points throughout this country. From time to time these cars travel to all the mining districts, and when not engaged in fighting fires, give instruction in first aid to the injured and in the use of the different forms of breathing apparatus to be worn in case of mine fires.

After thoroughly training many different groups in a state it is the custom of the Bureau of Mines to hold a contest in which these different teams participate. For the past three years the teams winning these state contests have participated in a national first aid meet at which suitable prizes are given. Last year at the annual nation-wide contest held by the Bureau of Mines at San Francisco, teams came from practically every mining state in the Union and from Alaska as well. So widespread has this movement become in the mining world that, almost without a single exception, every up to date mining company is devoting much time to training their men in this line. This spirit has become generalized only through the teaching of the Bureau of Mines. We are of the opinion that in less than ten years hence every underground worker in the United States will be compelled to become proficient in the handling of injured men.

I have been connected with mining hospitals for some time, and never having belonged to the Bureau of Mines, am offering this testimony to show, from the standpoint of a mining surgeon, what a potent factor in the first aid movement the U. S. Bureau of Mines has been from the earliest days of this movement.

F. E. CLOUGH, M.D., Lead, S. D.

History of Medical Education in the United States

To the Editor:—In THE JOURNAL, Feb. 5, 1916, appears a copy of an interesting letter written in 1878 by Dr. John A. Wyeth to Dr. J. Marion Sims, containing a proposition to establish a high grade medical school in New York City. This letter has called to mind a somewhat similar proposition discussed in the Medical Society of the State of Pennsylvania in the year 1884 (*Transactions*, p. 33). The resolution which opened the discussion at that time was as follows:

Whereas, The present demands for higher education in medicine require colleges to adopt a preliminary examination, and a three years' graded course, and to separate the examining board from the teaching faculty, therefore,

Resolved, That the Nominating Committee report, in addition to the usual officers, the names of seven members or delegates, not more than three of whom shall be from Philadelphia, who shall be called the Committee on Medical Education.

Resolved, That this Committee shall be directed and given authority to obtain before the next annual meeting of the society a charter for a college situated in Allegheny or Philadelphia County to be called "The Medical College of the State of Pennsylvania."

Resolved, That the charter of said college shall embody the points referred to in the above preamble, namely, a preliminary examination, a three years' graded course, and an examining board appointed by this society who shall examine all pupils and applicants for the degree of doctor of medicine, and the said charter shall prohibit the teachers acting as examiners.

Provided, however, that if, before the beginning of the session of 1884-85, all the undergraduate medical schools in the state adopt a preliminary examination, a three years' graded course, and an examining board, wholly or in part separate from the teaching faculty, then the committee shall take no steps to secure such charter; but shall report at the next meeting of the society the above facts.

After considerable discussion the whole matter was laid on the table.

Such records of the movement to improve medical education in the United States are a rather instructive exhibit of the defects in medical education thirty-five or forty years ago. Historically these have possibly a value which the Association journal may care to have recorded in its columns.

JOHN B. ROBERTS, M.D., Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE NUMBER OF COLON BACILLI IN WATER AND IN MILK

To the Editor:—1. What is the Phelps method of enumerating colon bacilli in water?

2. What is the approved method for ascertaining the number per cubic centimeter of colon bacilli in milk?

W. W. WATKINS, M.D., Phoenix, Ariz.

ANSWER.—1. Phelps' method for calculating the numbers of bacteria is based on the following principle: If a series of cultures, made from appropriate dilutions, yield some positive and some negative results, the most probable value of the actual number of organisms present is indicated by the reciprocal of the greatest dilution giving a positive result. For example, if dilutions of 0.1, 0.01 and 0.001 c.c. give positive results for the first two, and negative for the last, then the most probable number of bacteria present is 100. To apply this method to the enumeration of *B. coli*, the dilutions are inoculated into litmus-lactose-broth in fermentation tubes, or plated in litmus-lactose-agar. Subcultivation is done in the usual way for specific determination. (*Am. Jour. Pub. Hyg.*, 1908, xviii, 141).

2. Milk is carefully sampled, if possible kept in the original receptacle, and cooled below 40 C. (104 F.), but not frozen, until examined. It is thoroughly well shaken before diluting, the customary precautions being employed. Dilutions (with sterilized drinking water) of 0.1, 0.01, etc., are made, each dilution being shaken vigorously to break up clumps. One c.c. of each dilution is measured into a sterile Petri dish (preferably with porous earthenware cover), litmus-lactose-agar is poured as usual, and incubation is done at 37 C. (98.6 F.) for forty-eight hours or five days at 21 C. (69.8 F.). The red colonies are counted, and subcultivation is done for specific determination.

We may refer also to the following publications of the American Public Health Association:

"Standard Methods for the Bacterial Examination of Milk."
"Standard Methods for the Bacterial Examination of Water."

TREATMENT OF "AFTER-PAINS"

To the Editor:—In women who have borne several children and whose muscles seem to be quite lax, I give 15 c.c. of ergot every six hours for three doses, then a quarter grain of morphin once or twice if necessary, to check severe after-pains. I use the Credé method immediately after delivery and after the placenta passes. This treatment is followed principally in cases of patients having had several days and nights of distressing after-pains. May I have the treatment discussed? Please tell me whether or not the morphin increases the liability to infection.

B. C. FAUST, M.D., Deary, Idaho.

ANSWER:—The Credé expression generally is understood to mean expression of the placenta from the uterus. The term cannot properly be applied to massage of the uterus after the placenta passes. Numerous authorities recommend abdominal massage not only immediately after delivery of the placenta but also continued for two or three days for the prevention and treatment of after-pains. This measure is probably of value. Ergot has also been recommended for the prevention of after-pains, but in smaller doses than those mentioned above. Ordinarily from 3 to 5 c.c. are given every three to six hours, the administration being continued sometimes for three to four days. The suggestion to use a limited number of larger doses is not unreasonable. Morphin or some similar narcotic or sedative is also recommended by most authors. There is little, if any, reason to think that morphin so used increases the liability to infection. Its tendency to produce constipation should be overcome by appropriate laxatives.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Regular, Little Rock, May 9. Sec., Dr. T. J. Stout, Brinkley; Eclectic, Little Rock, May 9. Sec., Dr. C. E. Laws, 712 Garrison Ave., Fort Smith.

ILLINOIS: Chicago, May 4-6. Sec., Dr. C. St. Clair Drake, Springfield.

MASSACHUSETTS: Boston, May 9-11. Sec., Dr. Walter P. Bowers, Room 501, No. 1, Beacon St., Boston.

NEVADA: Carson City, May 1. Sec., Dr. Simeon L. Lee, Carson City.

NEW YORK: Albany, Buffalo, New York and Syracuse, May 16-19. Sec., Mr. Harlan H. Horner, Chief Examinations Division, Educational Bldg., Albany.

Medical Practice Requirements in Venezuela

A letter recently received from the American consul at La Guaira, Venezuela, gives, as follows, the requirements which have to be met by foreign physicians desiring to practice medicine in Venezuela:

The applicant must present his diploma, which must be validated (usually by a Venezuelan consul or ambassador in the United States), and must also take end examinations in sixteen or more subjects studied by medical students in the University of Caracas. He must also take a general examination. The examinations, which are both oral and written, must be in the Spanish language, and the total cost is approximately $45.

It was believed that one or two American physicians might do quite well in Caracas, as the English speaking colony there is growing.

Montana October Report

Dr. William C. Riddell, secretary of the Board of Medical Examiners of the State of Montana, reports the written examination held at Helena, Oct. 5-7, 1915. The total number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 30 of whom 25 passed and 5 failed. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
University of Colorado	(1914)	79.9
Bennett Medical College	(1915)	81.6
Chicago College of Med. and Surg.	(1913) 76.4; (1915)	83
College of Physicians and Surgeons, Chicago	(1896)	81.4
Dearborn Medical College	(1906)	82.3
Rush Medical College	(1904)	76.7
University of Illinois	(1913) 83.5; (1914) 79.3; (1915)	86.2
Sioux City College of Medicine	(1905)	77.2
State University of Iowa, College of Homeo. Med.	(1894)	78.7
University of Louisville	(1915)	81.5
University of Michigan Medical School	(1906)	77
University of Minnesota	(1912)	82.8
St. Louis University	(1913) 84.4; (1914)	81.7
Washington University	(1898)	75
John A. Creighton Medical College	(1915)	85
University of Oregon	(1904)	76.2
Jefferson Medical College	(1913) 79.6; (1914)	81.3
University of Tennessee	(1914)	77.5
Milwaukee Medical College	(1910)	75.2
Marquette University	(1915)	82.7

FAILED		
College of Physicians and Surgeons, Chicago	(1908)	71.4
Hahnemann Med. Coll. and Hosp., Chicago	(1893)	74.5
University of Louisville	(1908)	55.9
College of Physicians and Surgeons, Baltimore	(1914)	73.9
John A. Creighton Medical College	(1909)	57.8

Kansas October Report

Dr. H. A. Dykes, secretary of the Kansas State Board of Medical Registration and Examination, reports the written examination held at Topeka, Oct. 12, 1915. The total number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 6, of whom 4 passed and 2 failed. Twenty-three candidates were licensed through reciprocity. The following colleges were represented:

PASSED		
College	Year Grad.	Total No. Examined
Hahnemann Med. Coll. and Hosp., Chicago	(1896)	1
Northwestern University	(1915)	1
Boston University	(1915)	1
University of Nebraska	(1915)	1

FAILED		
Pacific Medical College*	(1914)	2

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
University of Arkansas	(1913)	Arkansas
College of Physicians and Surgeons, Chicago	(1903)	Missouri
Hahnemann Medical College and Hospital, Chicago	(1915)	Illinois
Northwestern University	(1909) Indiana; (1913) (1915)	Illinois
Medical College of Indiana	(1902)	Indiana
College of Physicians and Surgeons, Keokuk	(1898)	Iowa
State University of Iowa, College of Medicine	(1915)	Iowa
Johns Hopkins University	(1903)	Missouri
American Medical College	(1911)	Oklahoma
Eclectic Medical University, Kansas City	(1911) (1915, 6)	Arkansas
Kansas City Hahnemann Medical College	(1910)	Arkansas
St. Louis University	*(1914)	Oklahoma
John A. Creighton Med. Coll.	(1912) Wisconsin; (1914)	Nebraska
University of Cincinnati	(1915)	Ohio

* This institution is located at Los Angeles, and grants as much as three years of advanced standing for work done in osteopathic colleges. It is reported not recognized by the California State Board of Medical Examiners either as a medical or as a drugless therapy college.

New Jersey October Report

Dr. Alexander MacAlister, secretary of the New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, Oct. 19-20, 1915. The total number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 40, of whom 36 passed and 4 failed. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Yale University	(1913) 81; (1914)	79.9
Georgetown University	(1915)	27.6
College of Physicians and Surgeons, Baltimore	(1915)	77.8
Dartmouth Medical School	(1910)	83.6
Fordham University	(1915) 75, 76.5, 80.7, 85	
New York Homeo. Med. Coll. and Flower Hospital	(1914) 75.1, 81, 82.2; (1915) 75.1, 77.7	81.4
University and Bellevue Hosp. Med. Coll.	(1911) 81.3; (1915) 85,	87.5
University of the City of New York	(1891)	75
Hahnemann Med. Coll. and Hosp. of Philadelphia	(1915)	77.1
Jefferson Medical College	(1914) 76.7, 78.4, 79; (1915) 80.5, 80.5, 83.2, 83.7.	80.4,
Medico-Chirurgical College of Philadelphia	(1914) 82, 85.3; (1915) 76.8, 81.2.	78.1,
University of Pennsylvania	(1908) 81; (1915)	87.6
Woman's Medical College of Pennsylvania	(1915)	85.3

FAILED		
Kentucky School of Medicine	(1906)	60.7
University of Berlin	(1898)	62.6
University of Naples	(1893) 55.2; (1894)	64

Thirty-eight candidates were licensed through the endorsement of credentials from June to November, 1915. The following colleges were represented:

PASSED		
College	Year Grad.	Total No. Licensed
Georgetown University	(1913)	1
College of Physicians and Surgeons, Baltimore	(1907) (1912)	2
Johns Hopkins University	(1913)	1
Harvard University	(1915)	1
Columbia University, College of Physicians and Surgeons	(1896) (1900) (1911) (1913, 2)	5
Fordham University	(1913)	1
Long Island College Hospital	(1912, 2) (1913)	3
New York Homeo. Med. Coll. and Flower Hosp.	(1912) (1913)	2
New York Med. Coll. and Hosp. for Women	(1914)	1
Syracuse University	(1915)	1
University and Bellevue Hospital Medical College	(1907) (1913, 2) (1914) (1915)	5
University of Buffalo	(1896)	1
Eclectic Medical College, Cincinnati	(1915)	1
Medical College of Ohio	(1884)	1
Starling-Ohio Medical College	(1913)	1
Jefferson Medical College	(1902) (1912) (1913)	3
Medico-Chirurgical College of Philadelphia	(1915)	1
University of Pennsylvania	(1897) (1900) (1901)	3
University of Vermont	(1913)	2
University College of Medicine, Richmond	(1910)	1
University of Naples	(1913)	1

Nebraska November Report

Dr. H. B. Cummins, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, Nov. 10-11, 1915. The total number of subjects examined in was 12; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 17, of whom 15 passed and 2 failed. Twenty-seven can-

didates were licensed through reciprocity. The following colleges were represented:

College	PASSED Year Grad.	Per Cent.
Chicago College of Med. and Surg.	(1915)	78.6
Chicago Homeopathic Medical College	(1892)	79.6
Rush Medical College	(1913)	85.9
University of Illinois	(1914) 86.4; (1915)	77.4
Baltimore University	(1889)	89.1
Tufts College Medical School	(1915)	78.2
University Medical College, Kansas City	(1913)	75
Washington University	(1915)	82.1
John A. Creighton Medical College	(1915)	78.6, 80.2
University of Nebraska	(1915)	80.2, 80.6, 81.6, 85.2

College	FAILED	
Cotner University	(1914)	74.2
Lincoln Medical College	(1915)	71

College	LICENSED THROUGH RECIPROCITY Year Grad.	Reciprocity with
Denver and Gross College of Medicine	(1909)	Colorado
Georgetown University	(1876)	Kansas
Bennett College of Eclectic Med. and Surg.	(1906)	Illinois
Bennett Medical College	(1912)	Illinois
Chicago College of Med. and Surg.	(1914)	Illinois
Coll. of Phys. and Surgs., Chicago	(1898) Illinois; (1908)	Wisconsin
Hering Medical College	(1912)	Kansas
Northwestern University	(1906) (1913) Illinois; (1914)	Missouri
Rush Medical College	(1896) Illinois; (1912) (1914) Illinois.	Minnesota; (1913)
Indiana University	(1911)	Wisconsin
Keokuk Med. College, Coll. of Phys. and Surgs.	(1906)	Iowa
State University of Iowa, College of Homeo. Med.	(1915)	Iowa
Southwestern Homeo. Med. Coll. and Hosp.	(1901)	Kentucky
University of Michigan Medical School	(1912)	Michigan
St. Louis University	(1912) (1914)	Missouri
Eclectic Medical College	(1903)	Indiana
Medical College of Ohio	(1895)	Indiana
University of Pennsylvania	(1901)	Wisconsin
Milwaukee Medical College	(1903) Wisconsin; (1905)	Kansas

South Carolina November Report

Dr. A. Earle Boozer, secretary of the State Board of Medical Examiners of South Carolina, reports the written examination held at Columbia, Nov. 9-11, 1915. The total number of subjects examined in was 8; total number of questions asked, 105; percentage required to pass, 75. The total number of candidates examined was 36, of whom 16 passed and 20 failed. The following colleges were represented:

College	PASSED Year Grad.	Per Cent.
Howard University	(1915)	84.4, 87.6
Atlanta Medical College	(1915)	76.2
Southern College of Medicine and Surgery	(1914)	76.7
Bennett Medical College	(1915)	81.5
Tufts College Medical School	(1914)	75
Jefferson Medical College	(1898) 76; (1914)	87
Med. Coll. of the State of South Carolina	(1915)	76.6, 78.4, 81
Meharry Medical College	(1915)	75, 75
University of West Tennessee	(1914)	76.6
Gate City Medical College	(1909)	75*
University of Virginia	(1901)	82.6

College	FAILED	
Birmingham Medical College	(1915)	63.1
Atlanta College of Physicians and Surgeons	(1912)	69.2
Atlanta Medical College	(1914) 66.7, 67.6; (1915)	64.7
Atlanta School of Medicine	(1909)	68.5
Georgia College of Eclectic Medicine and Surgery	(1912)	†
Southern College of Med. and Surg.	(1913) 63.4; (1914)	70.2
North Carolina Medical College	(1903)†; (1914)	72.9
Maryland Medical College	(1905)	65.2
University of Oklahoma	(1915)	73.2
Medical College of the State of South Carolina	(1911)	63
Meharry Med. Coll.	(1909) 68.7; (1911)†; (1912) 60.2; (1915)	14
Memphis Hospital Medical College	(1911)	65.4
University of West Tennessee	(1913)	†

* Graduation not verified.
† No grade given.

West Virginia November Report

Dr. S. L. Jepson, secretary of the West Virginia Public Health Council, reports the oral, practical and written examination held at Elkins, Nov. 9-11, 1915. The total number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 80. The total number of candidates examined was 19, of whom 15 passed and 4 failed. Thirteen candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED Year Grad.	Per Cent.
George Washington University	(1915)	87.5
Howard University	(1914)	83.4
Bennett Medical College	(1915) 83.8, 85.8, 87.6, 88.6,	90.6
College of Phys. and Surgs., Baltimore	(1915)	83.6
University of Maryland	(1914)	86.7
New York Homeo. Med. Coll. and Flower Hosp.	(1915)	83.7
Medical College of Virginia	(1912) 92.5; (1914) 80.1, 85; (1915)	85.8
University of Virginia	(1914)	85.8

College	FAILED	
Bennett Medical College	(1915)	75
College of Phys. and Surgs., Baltimore	(1915)	75.7
Medical College of Virginia	(1915)	76.5, 76.9

College	LICENSED THROUGH RECIPROCITY Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery	(1913)	- Illinois
University of Louisville	(1914, 2)	Kentucky
Maryland Medical College	(1912)	Maryland
St. Louis University	(1912)	Iowa
University of the City of New York	(1881)	Ohio
University of Oklahoma	(1913)	Maryland
University of West Tennessee	(1910)	Tennessee
Vanderbilt University	(1913)	Mississippi
Medical College of Virginia	(1912)	Virginia
University College of Medicine, Richmond	(1913)	Dist. Colum.
University of Virginia	(1897)	Virginia
University of Bonn	(1889)	Penna.

The following questions were asked:

OBSTETRICS AND GYNECOLOGY

1. What are the subjective signs of pregnancy? 2. What are the immediate dangers of abortion? 3. How is the diagnosis of ectopic gestation made before tubal rupture, or abortion? 4. What are the predisposing causes of dystocia in plural births? 5. What are the indications for podalic version? 6. Define inversion of uterus and give cause. 7. Name five varieties of endometritis. 8. Give results following removal of the uterine appendages. 9. What are the symptoms of the fibroid tumor? 10. Describe briefly the operation of trachelorrhaphy.

SPECIAL MEDICINE

1. Trachoma: Give symptoms and treatment. 2. What are some of the conditions requiring enucleation of eye ball? 3. Mastoiditis: Give symptoms and treatments. 4. Hay fever: Give causes and treatment. 5. Blood pressure: What is normal, and how determined? 6 Chest expansion: What is normal? Name some of the things that impair it. 7. Eczema capitis: Describe and treat. 8. Furuncle: Describe and treat. 9. What are the duties of a sanitary engineer; of an epidemiologist? 10. Give principal points in taking history of a case.

PRACTICE OF MEDICINE AND PEDIATRICS

1. Give diagnosis and treatment of lobar pneumonia. 2. Acute nephritis in a child of 3 years. Give hygiene and treatment. 3. Give treatment for acute rheumatic fever. 4. Chorea in a child 7 years old: Give treatment. 5. How much, what, and how often would you feed a 2 months old bottle-fed infant? 6. Etiology, symptoms and treatment of erysipelas. 7. In what diseases may you expect to find blood in stools? 8. Define, diagnose and treat acute poliomyelitis. 9. Give etiology, symptoms and treatment of facial paralysis. 10. Name two varieties of icterus neonatorum.

BACTERIOLOGY AND HYGIENE

1. Give an outline of the mechanism of immunity. 2. Describe the effect of temperature on bacteria. 3. Describe Gram's method of staining. 4. How are pure cultures of bacteria obtained? 5. Name any characteristic of the colon-typhoid group of bacilli. 6. What constitutes good drinking water? 7. What is sewer gas? 8. How much of each of the three varieties of food per day should a workingman take? 9. Give the reasons for the importance of collecting vital statistics. 10. Describe a model kitchen for an ordinary home.

SURGERY

1. Describe fully but briefly the process of repair in fractures of long bones. 2. Name the varieties, and give the causes and pathologic consequences of embolism. 3. What is the present generally accepted theory of shock, and what can be done to prevent its development after operations? 4. Give the common causes of rupture of the intestine, and discuss its diagnosis before peritonitis has developed. 5. What are the usual forms of injury which produce Pott's fracture, Colles' fracture, and fractures of the lower end of the humerus? 6. Describe ligation of the external carotid artery. 7. Give the treatment of an infected joint caused by a penetrating wound. 8. Give the symptoms and common surgical causes of compression of the brain. 9. Give the etiology of cholecystitis, and the indications for cholecystectomy. 10. What are the causes of chronic sinuses? Discuss the treatment.

MATERIA MEDICA AND THERAPEUTICS

1. Define materia medica and therapeutics. 2. Opium: Name three alkaloids; give physiologic action and doses of each. 3. Name three anthelmintics; give doses and methods of use. 4. Name three diuretics; give physiologic action of each. 5. Describe method of preparation and use of: (a) mustard plaster, (b) fly blisters, (c) turpentine stupe. 6. The Roentgen ray: Give therapy. 7. Boric acid: Give therapy. 8. Digitalis: Give therapy. 9. Iodine: Give therapy. 10. Name two germicides; give therapy of each.

CHEMISTRY AND MEDICAL JURISPRUDENCE

1. Name five elements with their symbols and atomic weight. 2. How would you make a 2 per cent. solution of silver nitrate? 3. Name the principal solid ingredients of urine. 4. What is the composition of Seidlitz powders, and what is the result of the combination? 5. Why use distilled water in chemical solutions? 6. In a burned or charred body, how would you tell whether death had occurred before or after burning? 7. Differentiate death by morphin poisoning from that by heart failure. 8. Describe the signs of death by strangulation. 9. What is the legal significance of dying declarations? 10. Describe the manner of a medical expert in court.

ANATOMY

1. Locate and describe the rectum. 2. Describe the changes in the vascular system at birth. 3. Locate the principal groups of lymphatic glands. 4. Describe the hip joint. 5. Locate and describe the spleen. 6. Describe the thoracic duct. 7. What blood vessels pass to and from the liver? 8. What are the anterior and posterior boundaries of the axilla? 9. Name the twelve parts of the cranial nerves. 10. What muscles form the calf of the leg? Describe any one of these muscles.

Miscellany

The International Joint Commission on Boundary Waters

The International Joint Commission held a meeting at Washington, D. C., March 8 and 9, to consider the final report on the engineering investigations which have been made during the past year relative to the pollution of boundary waters. The commission is composed of three members from the Dominion of Canada and three from the United States. It is formed as a permanent tribunal for the adjustment of boundary matters between the two countries under the terms of the treaty of Jan. 11, 1909, between the United States and Great Britain. The commission has from time to time considered various matters relative to water power, water diversion and obstruction to navigation, including the adjustment and control of lake levels, and has also during the past three years been considering the matter of pollution of boundary waters.

The treaty referred to states that "the waters therein defined as boundary waters and the waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other." In 1913 a reference comprising two branches was submitted to this commission whereby it was asked to determine in brief, first, whether the treaty obligations were being violated and if so, at what points and to what extent and by what causes, and, secondly, what remedies would be feasible and advisable under the circumstances. The first branch of the reference was answered by the commission in a progress report dated Jan. 16, 1914, embodying the report of the sanitary experts. Of the latter, Dr. Allan J. McLaughlin, U. S. Public Health Service, had been appointed chief sanitary expert, and with him were associated Drs. J. W. S. McCullough and John A. Amyot, and Fred A. Dallyn, all of the Provincial Board of Health of Ontario. In brief, it was found that the provisions of the treaty were seriously violated, and that public health was endangered at many points, particularly on the boundary rivers. The waters of the Great Lakes themselves, from an international standpoint, were found to be satisfactorily pure, existing pollution being confined to the shore fronts.

The second branch of the reference was essentially engineering, and its solution was placed in the hands of Prof. Earle B. Phelps as consulting sanitary engineer. Engineering offices were opened at Detroit and Buffalo in charge of Mr. Henry C. McRae and Mr. Frank C. Tolles, respectively, and during the past year comprehensive drainage and disposal schemes have been developed for these two cities and for all the smaller communities on both sides of the St. Clair, Detroit and Niagara rivers. The final report on this work has just been completed, and is now in course of publication. The meeting of the commission referred to was for the purpose of hearing and discussing this report. The general conclusions and recommendations of the report have not been accepted by the commission, and will not be until all the interested communities, as well as the state and federal representatives of the two governments, have had opportunity to review the findings and to be heard relative thereto.

Not only does this international commission represent a unique and, by contrast with other existing methods, an eminently satisfactory method of dealing with international affairs, but also the findings of the commission in the particular case in question promise to point the way toward a more systematic and consistent policy of the control of stream pollution than has heretofore been possible under existing methods of state control.

Morbidity Registration

In an article in *Public Health Reports*, Feb. 11, 1916, Dr. John S. Fulton and Dr. John S. Fulton, Jr., of the Maryland State and Baltimore health departments, respectively, advocate the formation of a morbidity registration area in the United States, similar to the registration area now established for deaths. Until the "model bill" for the notification of communicable diseases prepared by the United States Public Health Service, which names over thirty notifiable diseases, has been adopted by all or a sufficient number of states, the establishment of a registration area covering morbidity would have to be based on only the four most completely reported diseases, typhoid fever, scarlet fever, measles and diphtheria. For many years the Public Health Service has published information of the more important communicable diseases, in which it has had more recently the cooperation of some state and city health departments. This has resulted in better figures, but the information still lacks much in uniformity and completeness. In determining what states should be included, the figures from thirty-two states and the District of Columbia for the four diseases named have been taken for the years 1912, 1913 and 1914. They show that there were reported 1,171,247 cases, with a mortality of 5.95 per cent. Taking those showing a rate below this figure, the following states would be included in such provisional registration area: Connecticut, District of Columbia, Idaho, Montana, Kansas, Maryland, Massachusetts, Mississippi, Nevada, New York, Ohio, Oregon, South Dakota, Utah, Vermont and Washington. Four of these, however, Idaho, Nevada, Mississippi and South Dakota, are not now in the registration area for deaths, and could not at present be included in a provisional registration area. It is shown that in the thirty-two states and the District of Columbia, the fatality rates for the four infectious diseases named have declined from year to year, indicating, it is said, that notification is more effective each year. This is one of the results of better information concerning deaths and diseases, and is a good reason, among others, for the establishment of a registration area for morbidity.

Studies on Leprosy

Public Health Bulletin 75 of the U. S. Public Health Service contains six short papers on leprosy, its treatment and bacteriology. George W. McCoy and Harry T. Hollmann give a brief summary of the opinions of authorities on chaulmoogra oil in the treatment of leprosy and the results of their experience in its use in Hawaii. The authors have administered it in some form to nearly every leper coming under their care. The majority take it by mouth in gelatin capsules. The results have been about such as those reported in the literature elsewhere. Few of the patients have taken chaulmoogra oil alone, the tendency being, the authors say, to give everything that might be of benefit to the patient. Improvement often occurs in leprosy without special treatment. The oil was given hypodermically in forty-two cases, in sixteen of which it was given for periods of from ten to seventeen months. Ten patients improved, four remained stationary and two progressed. The remaining twenty-six patients had not taken the oil long enough to enable the authors to judge of the effect. Of the ten improved, only one had improved to such an extent that acid-fast bacilli were absent in smears from lesions. Most of the patients took oil by mouth in addition to the injections, and in some carbon dioxid snow was applied to the lesions.

McCoy and Hollmann make a separate report on their experience with carbon dioxid snow in the treatment of the lesions of leprosy. They used a snow pencil one-half by three inches in size, applied with firm pressure for ten seconds, going over the entire area of the lesion systematically until frozen. The lesion is usually depressed about 2 mm., but quickly thaws, and in two or three hours a blister forms. The treatment is repeated when the local effect has passed away, usually in two weeks. The total number of cases treated was thirty-one, of which twenty-seven were of the nodular, three of the mixed and one of the anesthetic type. One patient in whom the treatment was begun by Dr. Wayson of the leper receiving station had received the applications for three years. He showed the greatest improvement. All treated areas had been bacteriologically negative for about six months. The patient had also taken chaulmoogra oil by injection and by mouth. In another patient the indurations and nodules were nearly all absorbed, leaving pigmented

areas which, however, still contained acid-fast bacilli. A macular area in one patient and a leukoderma in another did not improve under the carbon dioxid treatment. Of the remainder of the patients, seventeen showed decrease in size of lesions treated and the cosmetic effect was favorable, but all were bacteriologically positive. Ten showed no improvement. As it has been shown that bacteria will not be killed at a temperature of 250 C. below freezing, it is not to be expected that they will be destroyed by this application. The authors believe, however, that it is as satisfactory as any other local agent.

Hollmann reports on his examinations of the blood for the lepra bacillus, employing the technic of Crow and Rivas. In twenty-two lepers examined, six specimens had demonstrable acid-fast bacilli; in two cases only a single organism was found. In one case an acid-fast bacillus was found in the blood when none were found in the skin scrapings at the site of the needle puncture. In one patient, during a period of new nodule formation, with fever, acid-fast bacilli were found in simple stained blood smears.

Goodhue and McCoy report a case of leprosy in a child 19 months old. Leprosy is rarely found in those under 5 years of age. In 1,062 lepers under observation, only eight were found under 13 years of age.

Moses T. Clegg reports the cultivation of a nonchromogenic acid-fast bacillus from a case of nodular leprosy, which during the process of isolation remained constant as to morphology. A guinea-pig inoculated with a twenty-four hour culture died three months later showing a nodule in the leg with the typical appearance of leprosy, smears from which showed large numbers of acid-fast bacilli.

McCoy reports concerning the favorable influence of glucose on the growth of acid-fast bacilli. It was observed that an acid-fast culture which had been isolated from a leprous nodule by using symbiotic bacteria (cholera vibrios) grew luxuriantly on agar containing glucose, while on plain agar multiplication was hardly visible, and on glycerin agar the growth was scanty. Experiments to ascertain the amount of carbohydrate required showed that 1 part of glucose to 1,000 of the finished nutrient agar had a pronounced influence.

The Mortality of the Industrial Population of Massachusetts

Some interesting comparisons have been made between the statistics of the state health department and those of one of the large industrial life insurance companies which, it is said, has insured one out of every six persons in Massachusetts. The figures of the insurance company for 1914 show that the number of deaths corresponds to a death rate of 12.6 per 1,000. In the general population of the state, 1 year of age and over, the death rate was 12.5 per 1,000 for the year 1913, the last year for which the general figures are available. This indicates the interesting fact that the mortality of the industrial population is representative of the population at large, and this proportion is true of the principal causes of death, which parallel closely those for the population at large. A significant finding, however, is that the rate for tuberculosis among the insured is higher than for the population at large, being 13.4 per cent. among the insured as against 9.6 for the total population. This important difference is believed to be directly charged to the greater strain to which the industrial classes are subjected, and is especially significant because it affects the main period of life, the average age of those dying from tuberculosis being 37 years. About 15 per cent. of all deaths were from organic diseases of the heart, which constitute the chief cause of death in Massachusetts, both among the insured and the noninsured. The mortality from violence was 6.7 among those insured in the company referred to, and 7.5 in the general population. This, it is said, may be interpreted to show the effect of careful sanitary inspection of factories, and the cooperation of employees with the state authorities in the movement for accident prevention. Massachusetts, as is known, is an industrial state. The figures of the insurance company are extremely valuable on account of their accuracy. In recent years a campaign of education has been carried on, and a system of nursing of sick policy holders has been instituted. This work, in connection with that of the general community, has reduced the company's death rate among policy holders, in the previous three years, 7.8 per cent. for whites and 3.8 per cent. for colored lives.

Chicago and Dr. Favill

A man died in Chicago the other day who was an ornament to human nature. He had been immensely successful, but his obituaries were not inspired by the respect which the world has for success. They were written by appreciation and by gratitude.

His career was truly remarkable. Dr. Henry Baird Favill, as the Chicago *Evening Post* remarks, performed in a community of more than two million souls the function of the country physician. It may be added that the manner of his performance was as remarkable as the fact that he did perform such a function for the fourth city of the world.

He was one of the foremost physicians in the United States. His worldly material success was very great. But the true distinction of the man, amounting to a genius, was human. It was what he was to a multitude of individuals, who suffered, who were in trouble. His was the care not only of bodies, but also of souls. And he failed nobody who sought him, tho men and women of every class and estate and sort sought him. He was spiritual supporter to a whole weak brotherhood and sisterhood.

Dr. Favill was a man of science and had no illusions. He knew what the race is, and had not a trace of sentimentalism in his composition. But he helped everybody, anybody. And the stuff of his help was the best on earth. Contact with his strength inspired strength, and insincerity was shamed in his stalwart presence. It is an old figure, but that man was a tower.

"The good great man," as the poet Coleridge knew, is the best product of the long evolutionary process. Strong men are not always kind, and kind men are not always wise. But the profit to a community of a life such as this man lived is inestimable. Chicago peculiarly was favored by his presence. He is dead at 56, and we suppose there has been wider unofficial grief and more poignant sense of loss among individuals of that community than ever there has attended the death of any man.—Minneapolis *Journal*.

Glycuronuria as a Sign of Cancer

Roger found the urine normal in respect to its glycuronic acid content in only three of forty-six cancer patients. In one of the three the cancer was on the scalp and still very small; the two others had had their cancers removed. In a third of the positive cases the reaction for glycuronic acid was maximal. The cancers were in twelve various regions in the forty-six cases, the uterus leading with twenty-two cases. The stomach came next, with eight. They were in all stages of development, and the tests showed that glycuronuria is of early occurrence in malignant disease, revealing that the liver begins to suffer early with cancer. He says that the intensity of the reaction is an index of the extent of the impairment of liver functioning, and is thus an element in the prognosis. Roger's latest communication on the subject was published in the *Bulletins de la Société médicale des Hôpitaux* of Paris, 1915, xxxi, 499.

(In this and his previous communications on the significance of glycuronuria, he says it is a simple matter to estimate the content of the urine, treating it with mercuric acetate, then with naphthoresorcin and hydrochloric acid, heating for fifteen minutes in the water bath, cooling under running water, and then shaking up with ether. With the normal content the ether turns violet; a red or dregs of wine tint indicates functional disturbance, and a yellow tint reveals absolute insufficiency on the part of the liver. He does not give the amounts of the reagent used, but with Tollens' similar technic the proportions are 1 c.c. of a 1 per cent. alcoholic solution of naphthoresorcin and 6 c.c. of hydrochloric acid to 5 c.c. of urine.)

Book Notices

Diseases of the Skin. By Henry H. Hazen, A.B., M.D., Professor of Dermatology in the Medical Department of Georgetown University. Cloth. Price, $4. Pp. 539, with 233 illustrations. St. Louis: C. V. Mosby Company, 1915.

This is one of the smaller textbooks on dermatology. The author undertakes to describe fully the common diseases of the skin, and to give less attention to the rare diseases and to those foreign diseases which are seen infrequently in this country. By so doing he is able to give within the space which he has assigned himself a satisfactory account of common skin diseases and an orientation of the whole subject, fully as complete as the undergraduate student can hope to acquire. Wisely, he has taken up rather extensively the principles of dermatology. The anatomy and physiology of the skin, and the etiology, symptomatology, pathology and treatment of skin diseases are considered in sufficient fulness to give the student some general idea of the subject before he is plunged into the confusing maze of practical dermatology. This feature of Dr. Hazen's work is thoroughly to be commended.

The rest of the book, 450 pages, is devoted to the study of the various dermatoses. The descriptions are satisfactory, and are put in simple language, so that they are rather easier reading for the untrained dermatologist than is the average book on the subject. The substance of the work is orthodox, reliable and up to date. On the whole, the author has done his work well. There are some surprising errors in proof reading; for example, on pages 38 and 39, "cubic centimeter" is used three times as a unit of linear measure. The illustrations are of varying quality. Some of them are excellent; some of them are flat and show little detail. The greatest criticism is to be made on the illustrations of photomicrographs. They, for the most part, are almost completely lacking in detail, and are so ill-defined as to be useless. The illustration of the *Spirochaeta pallida* under dark field illumination on page 271 is particularly to be criticized. The recognition of the *Spirochaeta pallida* in the dark field is an important matter at the present time. It is highly desirable, therefore, that the illustrations of the organism published for students should be true to form. The illustration referred to on page 271 bears as little resemblance to the *Spirochaeta pallida* as a spiral can. It is a much better picture of a common corkscrew, and if it is used as a guide for determining the *Spirochaeta pallida*, it will certainly cause mistake. The classification of skin diseases which the author adopts is uncommon, and would seem to give the student little opportunity to realize the interrelation of allied dermatoses. Of course, the classification of skin diseases is a matter about which each dermatologist can have his own opinion; but, even so, it is still possible to classify skin diseases for the most part under a logical arrangement that puts similar or allied diseases together, and in the interest of rendering less confusing a complex subject, this should be done.

Pellagra. An American Problem. By George M. Niles, M. D., Gastro-Enterologist to the Georgia Baptist Hospital. Second Edition. Cloth. Price, $3 net. Pp. 261, with illustrations. Philadelphia: W. B. Saunders Company, 1916.

The first edition of this work was issued in 1912. Since that time there has been witnessed a marked ebb and flow of opinion concerning the etiology of pellagra, but the tide seems now to be setting steadily in favor of the dietetic view of its causation. It is probable that, had the publication of this work been deferred a few weeks, Dr. Niles would, in consideration of Goldberger's experiments at the Mississippi State Penitentiary, have felt justified in laying even more stress than he has done on this aspect of the question. In this connection, Dr. Niles has done himself an injustice. There are passages in the book from which one might be tempted to infer that the author had not kept abreast of recent discoveries in dietetics. Thus, in defending sound maize as a diet, he contents himself with proving its nutritive sufficiency, as judged by the ordinary analytic standards. Now, in 1906, Hopkins and Wilcock showed that mice cannot be kept alive on a diet of zein (the protein of maize), carbohydrate and fat, unless tryptophan be added, zein being entirely devoid of this amino acid. It is in these subtler deficiencies that lie the dangers of an "unbalanced" diet. Goldberger's results were, perhaps, published too recently to be considered in the book under review, but they were foreshadowed by Sandwith in his presidential address to the Society of Tropical Medicine and Hygiene in October, 1915 (*Lancet*, London, 1915, ii, 905). In a work such as the present, one would expect something more than a mere passing reference to the possibilities of this side of the question.

The book has been enlarged by forty-eight pages, an increase shared between etiology and treatment. In the discussion of the former, the new matter consists, chiefly, of the report for 1913 of the Thompson-McFadden Commission and of a notice of Goldberger's earlier work. The chapter on treatment, which is one of the best in the whole literature of the subject, has been expanded by the inclusion in extenso of Goldberger's dietary. Apart from these subjects, the most important new points noted are: the recognition of numerous cases of pellagra in countries, such as England, hitherto considered free or nearly free from the scourge; the abandonment by Sambon of his gnat (*Simulium*) theory; a perhaps inevitably greater prominence given to the rôle of pyorrhea alveolaris and, therefore, of emetin (alkaloid); a difference of opinion between Niles and Goldberger as to the intrinsic curative action of cold, and Bass' suggestion of public refrigerators for pellagrins. On account of the importance of the subject, separate mention must be made of a strong warning against the danger incurred by the exposure of pellagrins to the Roentgen rays.

There is some evidence of haste in the revision. Thus on page 30, line 19 from top, the expression "at that time" would naturally be taken to indicate the year 1912, but a reference to the first edition shows that 1909 is the epoch intended. Again, on page 219, "during the last five years" occurs in both editions, in reference to one and the same period. The subtitle is an indication of the author's chief motive in writing this book, namely, his desire to enforce the lesson that pellagra has become an American problem and a serious one. His attitude and his hopes are summed up in what might well have served as a peroration to his work: "The writer trusts that the physicians who read this book may feel constrained to aid in the enforcement of the pure food laws. . . . The mass of the American citizens may be trusted to do right if it is only presented in the proper manner and . . . wise and beneficent laws . . . will make, in the not distant future, a fading *memory* of pellagra, an American problem that was successfully and effectually solved."

The Biology and Treatment of Venereal Diseases and the Biology of Inflammation and Its Relationship to Malignant Disease. By J. E. R. McDonagh, F.R.C.S., Surgeon to Outpatients, London Lock Hospital. Cloth. Price, $6. Pp. 625, with illustrations. London: Harrison and Sons, 1915.

Mr. McDonagh is known to the dermatologic world as a dermatologist with a beautiful histologic technic which he has used to fortify radical and unorthodox positions in regard to certain diseases. He has developed most unusual views in regard to pathology and in particular to the cause of syphilis. It may be inferred, then, that in this book, which takes in at one grand sweep the biology of the venereal diseases and the biology of inflammation and its relationship to malignant diseases, the author has undertaken to square subjects so unrelated by means of a comprehensive theory. The work is devoted in large part to an exposition of the author's peculiar views, and to the account of what the author thinks is the organism of syphilis. This organism is not the accepted *Spirochaeta pallida*, but an organism with an elaborate life cycle which he has described and illustrated, and which he calls the *Leucocytozoon syphilidis*, or *Coccidium syphilidis*, and which others call peculiar forms of cell degenerations. The book is an exposition of certain aspects of disease as McDonagh sees them. It cannot be regarded as an exposition of accepted facts of these diseases, or, indeed,

of views which have any general acceptance, or seem likely to have. The work is a monument to the industry of an enthusiast. It is difficult to believe that it is a monument of any usefulness.

DIET FOR CHILDREN. A Complete System of Nursery Diet with Numerous Recipes; Also Many Menus for Young and Older School Children. A Home and School Guide for Mothers, Teachers, Nurses and Physicians. By Louise E. Hogan. Third Edition. Cloth. Price, 75 cents. Pp. 160. Indianapolis: The Bobbs-Merrill Company, 1916.

The last edition of this little manual appeared about six years ago. It is a compilation of some elementary facts regarding food that should be known to those concerned with the care and feeding of children. Simple menus are given as well as numerous recipes for use in health as well as in illness. The writer recognizes that the care of any child is an individual problem for that child. The book is sane and reliable.

AN INTRODUCTION TO BACTERIOLOGY FOR NURSES. By Harry W. Carey, A.B., M.D., Associate in Medicine, Samaritan Hospital, Troy. Cloth. Price, $1 net. Pp. 144, with illustrations. Philadelphia: F. A. Davis Company, 1915.

This book is based on lectures delivered to the nurses of the Samaritan Hospital Training School during the last eight years. It is practical, and the author has confined himself to those branches of the subject which a nurse will find useful in her work.

Medicolegal

Admissible Evidence of Unlawful Practicing of Medicine by Masseur

(Hyroop vs. State (Tex.), 179 S. W. R. 878)

The Court of Criminal Appeals of Texas affirms a judgment of conviction of defendant Hyroop of unlawfully practicing medicine. The court says that one witness testified that he went to the defendant's office and told him that five weeks previously he had had a violent attack of appendicitis, but the defendant said that he did not look like a man who had appendicitis, that he was suffering from inflammation of the colon, and proceeded to treat him for that, gave him an enema, had him lie down with a rolled pillow under his hips and another under his chest, and then "mashed" him up and down, pushing him clear to the table. After that he gave him an electric treatment with an electrode, later so using the electrode as to produce what was called the violet ray. As a matter of fact, the witness was not sick with any disease or disorder, but went at the instance of others to see whether or not the defendant was practicing medicine, within the provisions of the medical practice act, and making a charge therefor. He paid $3 for the treatment. Another witness went with him. The defendant contended that this made them accomplices and that the jury should have been so instructed. But, under no rule of law of which the court knows, would their acts constitute them accomplices, the men having gone to the defendant's office to detect him, knowing or believing that he was practicing medicine in violation of law. Their testimony was clearly admissible. A third witness testified that the defendant treated him for an affection of the hand and arm, his hand and the muscles of the arm hurting, and elbow aching; that the defendant gave him an electric treatment with a battery, also gave him what was termed a "hot-air" treatment, putting the hand in a "sweat box"; that the defendant told him that he could cure him, but he did not do so, although his treatment was continued two or three months; and that the defendant charged him $25. The defendant objected to the testimony of the witness. The defendant's contention was that he was a "masseur," and therefore did not have to obtain and register a certificate. As this was his contention, it was permissible for the state to show that he was treating disease by other means and methods than usually ascribed to a masseur, and the court did not err in admitting this testimony, or in admitting that he had an account at a drug store for medicines, and in one instance had prescribed and furnished a salve for a sore on the leg of a patient. The fact that he advertised and held himself out as a masseur would not prevent the state from showing, if it could, that he treated his patients by other means than those customarily used by a masseur in his particular sphere of labor. The giving of an enema, treatment by electric machinery, and by the use of hot-air apparatus do not come within the means and modes usually ascribed to the sphere of a masseur in the treatment of a disease, and as used by them aforetimes, and could not come within the exemption as defined by the legislature in exempting a masseur in his sphere of labor. The defendant was also wrong in thinking that the treatment must have been by administering medicines before he would be included within the prohibition of the law. The fact that he did not hold himself out as a "physician and surgeon" would not prevent his conviction if he practiced medicine within the meaning of that term as defined in the revised statutes.

Information Physician Not Permitted to Disclose

(Dreyfus vs. Milwaukee Electric Railway & Light Co. (Wis.), 154 N. W. R. 840)

The Supreme Court of Wisconsin, in affirming a judgment in favor of the plaintiff for $450 for injuries alleged to have been sustained in a slight collision of street cars, says that the defendant called as a witness the physician who treated the plaintiff after the injury, and asked him whether he treated the plaintiff at that time for hernia, and whether the plaintiff complained to him of hernia. The court thinks that objections to the questions were properly sustained. The plaintiff's evidence tended to show that she suffered from inguinal hernia resulting from the accident, and the object of the testimony offered was to show that she did not complain of such an injury and that the physician did not ascertain that she had it. But section 4075 of the Wisconsin Statutes, as amended in 1913, provides, in substance, that no physician or surgeon shall be permitted to disclose information received by him while attending a patient and which information was necessary to enable the physician or surgeon to treat the patient. The word "permitted" in this section was inserted by the amendment of 1913 in place of the word "compelled." This is not important except that it demonstrates that the legislature desired to make it absolutely certain that the information gained by a physician or surgeon for the purpose of treating a patient should not be disclosed under any circumstances. The court has nothing to do with wisdom of this policy; its only duty is to see that it is carried out. If the questions propounded to the physician in this case were answered either way, the statute would be set at naught. It was the physician's duty to treat the patient for whatever disease or infirmity the diagnosis of the case showed that she had. If therefore he answered that he treated her for hernia, the necessary inference of fact must be that the statements or symptoms of the patient or the physician's examination tended to show that she was suffering from hernia; if he answered that he did not treat her for hernia, the inference of fact must be that such statements, symptoms or examination tended to show that she was not suffering from hernia, but from some other difficulty. In either case the effect would be to disclose a part of the information which the statute says shall not be disclosed.

Circumstances Must Be Considered on Timeliness of Action for Malpractice

(Byers vs. Bacon (Pa.), 95 Atl. R. 711)

The Supreme Court of Pennsylvania reverses a judgment rendered in favor of the defendant, a physician and surgeon charged with negligence in failing to remove a drainage tube. The court says that it was alleged that the defendant performed an operation on the plaintiff, and discharged him from the hospital on March 21, 1910, telling him to report to his family physician; that the drainage tube in question was allowed by the defendant to remain in the wound, but, as it was not visible from the surface, the plaintiff did not know

of its presence. He continued under the care of his family physician, and it was not until June 8, 1911, that the tube was discovered in the wound and removed. This action for damages was brought Feb. 18, 1913. The trial judge was of the opinion that the action was barred by the state statute of limitations requiring actions for damages, not resulting in death, to be brought within two years from the time when the injury was done, and therefore gave binding instructions to the jury in favor of the defendant. But the supreme court holds that the judge should have admitted the evidence offered by the plaintiff, giving to it full and fair effect—should have allowed him to make out his case as completely as he could, before determining whether the action was barred by the statute, or whether there was anything in the case which would save it. The negligence charged was not in the insertion of the tube, but it was in the failure to remove it at the proper time, or in the failure to give notice of its presence, that it might be removed by another, when it had served its proper purpose. It could hardly have been intended to remain permanently in the body of the plaintiff, and he should have been allowed to show when and by whom the tube, which was inserted by the defendant, should have been removed. It might be that good surgical practice required it to be kept in the wound after the plaintiff was discharged from the hospital and placed under the care of his family physician. If the defendant was at fault in permitting the tube to remain in the wound when it should have been removed, or in failing to give notice of its presence, the time when such dereliction of duty occurred should have been shown, as that would constitute the real injury, and would start the running of the statute of limitations. It may have been coincident with the date of the plaintiff's discharge from the hospital, but not necessarily so. Then, too, it should have been a question for careful consideration, as to whether the statute should properly have been regarded as running against the plaintiff until such time as he could reasonably be charged with knowledge of the fact that the tube had been overlooked and left in the wound.

Breach of Contract to Marry by Person Having Pernicious Anemia

(*Parsons vs. Trowbridge* (*U. S.*), *226 Fed. R. 15*)

The United States Circuit Court of Appeals, Eighth Circuit, affirms a judgment for $250 damages in favor of the plaintiff, who sued the executor of the estate of one Oldfield to recover damages for an alleged breach of contract by said Oldfield to marry her. The court holds that as favorable an instruction as the plaintiff was entitled to was one given to the jury to the effect that, if it was a fact that Oldfield had a disease known as pernicious anemia, it would not be a sufficient excuse on his part for not carrying out the contract and having the ceremony performed. But if he had pernicious anemia, and believed that it would be fatal after a year or so from such time, the jury would have a right to consider that on the question of the amount of damages. Under the testimony offered, if he had pernicious anemia, which would be reasonably certain to bring about death within several months or a year, or something like that, the plaintiff would have his society for such shorter time and would be entitled to recover a lesser amount. The jury should consider the testimony with reference to pernicious anemia as bearing on that phase of the case and that only.

Soap-Berry.—In the humid parts of west Ecuador grows the jaboncello or soap-berry tree *(Sapindus saponaria)* which attains a height of about 50 feet, with wide spreading branches. It bears immense quantities of fruit the size and shape of cherries, which are so saponaceous as to be used instead of soap by many people of Ecuador. *Commerce Reports* states that although considerable quantities of the berries are utilized locally, many of these go to waste as there is little foreign demand for them. As they contain a large amount of saponin it is said they should be of value in the manufacture of soap.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, DETROIT, JUNE 12-16.

Alabama State Medical Association, Mobile, April 18.
American Assn. of Genito-Urinary Surgs., Washington, D. C., May 9-10.
American Association of Path. and Bact., Washington, D. C., May 9-11.
American Climatological and Clin. Assn., Washington, D. C., May 9-11.
American Dermatological Association, Washington, D. C., May 8-10.
American Gastro-Enterological Association, Washington, D. C., May 8-9.
American Gynecological Society, Washington, D. C., May 9-11.
American Laryngological Association, Washington, D. C., May 9-11.
Amer. Laryn., Rhin. and Otol., White Sulphur Sprgs., W. Va., May 5-6.
American Ophthalmological Society, Washington, D. C., May 9-11.
American Orthopedic Association, Washington, D. C., May 8-11.
American Otological Society, Washington, D. C., May 9-10.
American Pediatric Society, Washington, D. C., May 8-10.
American Society of Tropical Medicine, Washington, D. C., May 9-11.
American Surgical Association, Washington, D. C., May 9-11.
American Urological Association, St. Louis, April 17-19.
Arizona Medical Association, Phoenix, April 26-27.
Arkansas Medical Society, Texarkana, May 2-4.
Association of American Physicians, Washington, D. C., May 9-11.
California State Medical Society, Fresno, April 18-20.
Conference of State and Prov. Boards of N. A., Washington, May 16-17.
Cong. Am. Phys. and Surgs. of No. Am., Washington, D. C., May 9-10.
Connecticut State Medical Society, Bridgeport, May 17-18.
Florida Medical Association, Arcadia, May 10-12.
Georgia Medical Association, Columbus, April 19-21.
Illinois State Medical Society, Champaign, May 16-18.
Iowa State Medical Society, Davenport, May 10-12.
Kansas Medical Society, Topeka, May 3-5.
Louisiana State Medical Society, New Orleans, April 25-27.
Maryland Medical and Chirurgical Faculty, Baltimore, April 25-27.
Mississippi State Medical Association, Greenville, May 9-11.
Missouri State Medical Association, Excelsior Springs, May 8-10.
National Assn. for Study and Prev. of Tuberc., Wash., D. C., May 11-12.
Nebraska State Medical Association, Omaha, May 23-25.
New Hampshire Medical Society, Concord, May 16.
New York State Medical Society, Saratoga Springs, May 16.
North Carolina State Medical Society, Durham, April 18.
North Dakota State Medical Association, Devils Lake, May 10-11.
Ohio State Medical Association, Cleveland, May 17-19.
Oklahoma State Medical Association, Oklahoma City, May 9-11.
South Carolina Medical Association, Charleston, April 18-20.
South Dakota State Medical Association, Aberdeen, May 23-25.
Texas State Medical Association, Galveston, May 9-11.
West Virginia State Medical Association, Wheeling, May 16-18.

PHILADELPHIA COUNTY MEDICAL SOCIETY

Meeting held March 22, 1916

The President, DR. JOHN D. MCLEAN, in the Chair

SYMPOSIUM ON MECHANICAL AIDS

Mechanical Aids in Varicose Veins

DR. WILLIAM A. STEEL: In general, operative treatment of varicose veins by extirpation or ligation is the method of choice. Palliative treatment, however, by supportive means is indicated in patients enfeebled by age or constitutional disease or in cases in which radical measures are refused. These means are applicable only when the veins appear on the surface of the body. No suitable appliance has been devised for controlling varicosities of the external female genitalia. Varicocele and varicose veins of the leg are the varicosities amenable to mechanical treatment. Supports for the treatment of varicocele are of two classes, the suspensory and the jock strap. All types of these supports give some relief, but the best support in bad cases of varicocele is furnished by the athlete type of jock strap as worn by gymnasts, acrobats and vaudeville performers. Pressure devices for varicose veins of the leg may be divided into bandages and stockings. In the presence of ulcer, a desirable form of dressing is an imbricated arrangement of adhesive straps covering the ulcer and adjacent tissues with a spica bandage extending over the foot and leg. This is changed every third day until healing occurs. In the absence of ulcer, an elastic bandage of which there are three types, plain rubber, elastic rubber and elastic cotton web, may be used. These are applied from below upward and without reverses, covering the foot and leg, and when properly applied give the needed support. The plain rubber, however, cannot be worn continuously, because of the resultant sweating; there is difficulty in applying the webbed bandages evenly, and they are apt to loosen with walking, so that the patient eventually resorts to some form of stocking. Two general types of stockings are those made of elastic rubber webbing and those of elastic cotton webbing. Either form should not be used as an isolated section above the calf or thigh, as it acts as a constricting garter, cutting off return circulation.

Mechanical Treatment of Hernia

DR. G. G. DAVIS: Hernia is considered by some to have in most cases a congenital deficiency or peculiarity as its foundation. Whether or not this is true of the cases making their appearance in youth and adult age is somewhat of an academic question. It is a fact, however, that hernias of both the umbilical and inguinal type are quite common at birth and soon after. But rarely are early operative procedures required. In umbilical hernia in the new-born, in which the intestines protrude into the cord and so stretch the structures that rupture, infection and death are threatened, and early operative closure is imperative. In other cases, conservative measures are at times advisable. In the treatment of deformities of the new-born we should not forget the motto, "Safety first." Many cases tend to spontaneous cure, and simple treatment leads to success. In the umbilical variety of hernia I have frequently pressed the intestine back with one finger, folded the skin over and retained it by a strip of adhesive plaster extending half way around the body and held in place by the binder. Another method is that of fastening a large wooden, rubber or metal button over the hernial opening by an adhesive strap. Hernias involving the inguinal region are mostly of the oblique type. Care should be taken not to mistake an encysted hydrocele of the cord or an undescended testicle for a hernia. In this country a truss in usually used in the treatment of these cases. There is no especial advantage in persisting for years in the wearing of trusses in young children; operation is almost always successful, and is not dangerous. The requirements in a truss are that it shall be comfortable and effective, and to meet these requirements the spring should be of the proper length, strength and shape. The pad is an important part of the truss. It is oval or egg shaped, and should be fastened to the truss by adjustable means. The pads should cover the inguinal canal from the middle of Poupart's ligament to the spine of the pubis. They should lie parallel to Poupart's ligament and just above it, and make even pressure over their whole length. It is wrong to attempt to control the exit of a hernia by making pressure solely over the internal ring. Pressure should be made on the whole canal. The type of truss most favored is that known as the Hood truss. In this the springs are joined together in front by a strip of metal; but at the back a strap is used. There are two pads, one for each side. The real trouble in truss fitting is that the fitter is apt to be unwilling or unable to get the proper combination for the individual case. The parts subjected to pressure should be bathed with alcohol to which alum has been added. When applying a truss, the patient should be on his back with his shoulders raised and the knees flexed. The contents of the sac should be replaced. One should not be guilty of applying the truss before this is done. Pads preferably made of "factis," hair, or filled with water are sometimes of service in sensitive cases, at least, temporarily. When replacement of the hernia is impossible, the next best thing is to have a pouch made suspended by a waist band. Notwithstanding the fact that operations for the radical cure of hernia are much more satisfactory now than formerly, still trusses of some form are very extensively used, and the practicing physician should have some idea of their mode of application.

Mechanical Aids in Curvature of the Spine

DR. JAMES K. YOUNG: There are two principal forms of lateral curvature of the spine, functional and organic. There are also many varieties, habitual, pathologic and static. In the early stages of this disease the treatment has been quite satisfactory with exercises and light braces, and the results have often been very good. It is in the advanced cases, however, in the conditions formerly known as structural or fixed curves, in which forcible corrective methods, and particularly the Abbott methods, have given the best results. In the Abbott method the patient should be stretched daily for two weeks, the cast should be applied in the corrected position in a special frame every two months, and following this, a celluloid jacket should be worn, and exercises should be given. There are certain forms which cannot be treated by this method, especially a severe sharp angle deformity due to infantile palsy of the spine. In this form there is great danger of sloughing. Before beginning treatment it is absolutely necessary to exclude tuberculosis because of possible injury to the spinal cord. The forcible correction should be considered as a capital operation, and should be performed only by the experienced, as there is danger of injuring the nerves or spinal cord or producing fracture.

Mechanical Aids to Hearing

DR. RALPH BUTLER: Aids to hearing have found little favor as compared with aids to vision, probably because they are less efficacious, convenient and becoming than glasses; also, because the partially deaf are more sensitive in regard to their affliction than the partially blind. Mechanical aids are contraindicated when relief can be secured by treatment, or hearing is fairly good. They are of no value if the auditory nerve or centers are destroyed. Here nothing helps the patient except the sign language or lip reading, perhaps better named expression reading. In many very deaf patients the nerve and centers are normal, the trouble being in the conducting apparatus of the middle ear, and such patients are most likely to be helped by these devices. We recommend these appliances when the patient is very deaf, incurable, and finds that he can get on better with than without them. The only invisible aids to hearing which are of value are the artificial drumheads. They are occasionally of signal benefit, but obviously useless when the drumhead is thickened and stiffened from an old inflammation, and are contraindicated in purulent otitis media, or when they cause inflammation or tinnitus. They are most likely to be helpful in the presence of a dry perforation, or a relaxed drumhead. The principal types are the disk made of thin paper, or of rubber, the tiny flattened ball of cotton, or small pieces of rubber tubing. The disk of paper has the advantage that it acts as a splint and stimulates the growth of the epithelium, frequently causing the perforation to close. These disks cannot be changed by the patient, unless a handle is attached; and, like all these drumheads, they require observation to guard against irritation which may cause purulent otitis media. The indiscriminate use of the much advertised artificial ear drums or "invisible phones" is to be condemned. The increased intensity produced by the larger volume of sound collected by the conversation tube, ear trumpet and ear dome overcomes the pathologic stiffness of the ossicular chain and enables it to transmit the sounds to the nerve endings. Possibly these instruments also utilize the increased bone conduction of middle ear deafness.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Public Health, Boston

March, VI, No. 3, pp. 191-306

1 Extension of Plague Infection of Bubonic Type. R. H. Creel, San Juan, P. R.
2 Laboratory in Service of State. C. E. A. Winslow, New Haven, Conn.
3 Control of Scarlet Fever. A. J. Chesley, Minneapolis.
4 Need of Better Control of Some Neglected Contagious Diseases. J. E. Lane, New Haven, Conn.
5 Significance of Mortality Rates of Colored Population of United States. J. W. Trask, Washington, D. C.
6 Part Played by Hospitals in Control of Contagious Diseases. R. J. Wilson, New York.
7 Is Control of Measles and Whooping Cough Practicable? F. G. Curtis, Newton.
8 Public Health Publicity: Art of Stimulating and Focussing Public Opinion. E. A. Moree, New York.

American Journal of Tropical Diseases and Preventive Medicine, New Orleans

March, III, No. 9, pp. 471-528

9 Pellagra in Jamaica. J. F. Siler, U. S. Army.
10 Deep Sea Diving and Its Relation to Caisson Disease. Abstract of Available Literature. C. H. Halliday, Manila.
11 Primitive Medicine; Chills, Fever and Ague. Remarks on Plaiman's Work and Service. B. Percival, Paramaribo, D. G., South America.

Boston Medical and Surgical Journal

March 30, CLXXIV, No. 13, pp. 441-482

12 Cesarean Section: Consideration of Indications, Technic and Time of Operating. C. M. Green, Boston.
13 Modern Indications for Cesarean Section. J. T. Williams, Boston.
14 Cesarean Section — Overdone. F. S. Kellogg, Boston.
15 *Anesthesia in Obstetrics. A. Brant, Boston.
16 *Nitrous Oxid in Obstetrics. F. C. Irving, Boston.
17 Respiratory Mechanism in Pneumonia. L. H. Newburgh, J. H. Means and W. T. Porter, Boston.

15. **Anesthesia in Obstetrics.**—The one point brought out with greatest emphases by Brant is that no method of anesthesia is safe through the whole of labor. The varying indications and contraindications must, he says, be followed carefully and closely, with the safety of both mother and child in mind. For long, primiparous labors the following sequence would seem to be best: The proper use of bromids, chloral, or morphia-scopolamin in the first stage; the administration of these drugs to be stopped in time so that their effects shall have worn off by the time of expected delivery; nitrous oxid administration during pains, with or without the change to obstetric ether for delivery; or, in the hands of the trained obstetrician, the substitution of forceps for the second stage, under sufficient ether anesthesia.

16. **Nitrous Oxid in Obstetrics.**—Irving regards nitrous oxid and oxygen as being the most successful analgesic known for the relief of the pains of labor. He says it is the safest anesthesia. It has no untoward effects, immediate or remote, on either mother or baby. It does not delay labor or in any way impair the efficacy of the uterine contractions. It is pleasant to take, and recovery from it is extremely rapid and usually featureless. It can be administered anywhere and it can be employed by any physician who will take his confinement cases seriously enough to retain a capable assistant for its administration.

Bulletin of Johns Hopkins Hospital, Baltimore

April, XXVII, No. 302, pp. 93-120

18 *Ideal Operation for Aneurysms of Extremity; Report of Case. B. M. Bernheim, Baltimore.
19 *Post Partum Care of Perineum. E. D. Plass, Baltimore.
20 Cases of Gaucher's Disease Reported by Knox, Wahl and Schmeisser. F. S. Mandlebaum and H. Downey, Minneapolis.
21 Rôle of Certain Florentines in History of Anatomy, Artistic and Practical. E. C. Streeter, Boston.

18. **Operation for Aneurysms of Extremity.**—The patient whose case is cited by Bernheim had an aneurysm of the right popliteal artery, of one month's duration but which was increasing in size somewhat rapidly. At the operation a spindle-shaped tumor presented and was opened on its dorsal aspect, revealing only two openings, the entrance and exit of the popliteal artery, the two points being distant about an inch and a half from one another, and only the faintest sign of a groove being apparent between them. The popliteal vein was so densely adherent to the sac that it was impossible to separate it without taking part of the sac wall, which was done. A reconstructive Matas endo-aneurysmorrhaphy was impossible, hence Bernheim removed about 15 cm. of the internal saphenous vein from the affected leg at the knee and, after proper preparation, interpolated about 12 cm. of it between the severed ends of the popliteal artery. Only the ends of the sac were cut away, the remainder being left to be folded around the transplant as a partial reinforcement. Carrel's end-to-end suture was used. At the conclusion of the suturing blood went through the graft in a normal manner. An uninterrupted convalescence ensued. All pain and discomfort in the leg disappeared and a curious preoperative "dead feeling" of the great toe had given way to a normal feeling. Pulsation could be felt all along the vein graft as well as in the arteries of the foot.

19. **Post Partum Care of Perineum.**—In order to demonstrate whether such routine antiseptic treatment of the perineum after delivery has any distinctly beneficial effect on the course of the puerperium or on the healing of primary perineal repairs, the following clinical experiment reported by Plass was conducted. For a period of nine months all patients were divided into two groups after delivery, A and B (every alternate patient being placed in group A), and treated as follows: Those in group A were given the routine perineal care and those in group B were given no special attention. The routine care consisted in bathing the vulva and perineum with cotton pledgets soaked in 1:2,000 mercuric chlorid solution every four hours, as well as after each defecation and urination during the nine days the patient remained in bed. The patients in group B were merely kept macroscopically clean with warm tap-water and soap and a wash cloth. No attention was paid to voiding or bowel movements, unless, as sometimes happened after the initial dose of cathartic, the need of cleansing the parts was apparent. The bloody lochia were removed whenever necessary. Unless the patient was very ill, she was expected to keep herself clean. No exceptions were made to the alternate grouping of the patients. At the end of the experiment, when each group contained 200 cases, the records were carefully tabulated. The routine care was followed by many poor results, whereas excellent results were obtained in cases in which no antiseptic precautions were taken, hence the old routine was entirely abandoned. In addition to the better results obtained after the elimination of the more or less complicated antiseptic treatment, there is an economy in the time of the nurses. Plass concludes his paper as follows: The use of antiseptic solutions in the care of the perineum during the puerperium or in the after-care of primary perineorrhaphies is of no value. Macroscopic cleanliness alone gives better results and effects a considerable saving of time.

Florida Medical Association Journal, Jacksonville

March, II, No. 9, pp. 257-288

22 Artificial Infant Feeding by Malt Soup. A. G. Mitchell, Philadelphia.
23 Is Present Knowledge Sufficient to Cure and Prevent Tuberculosis? J. M. Masters, Port Orange.
24 Early Diagnosis of Tuberculosis. G. Baerecke, DeLand.
25 Cervical Laceration. D. Forster, Hawks Park.
26 Colles Fracture. J. Reeves, DeLand.
27 Typhoid. H. L. Merryday, Daytona.
28 Vaccine Therapy. W. L. Wood, New Smyrna.

Indiana State Medical Association Journal, Fort Wayne

March, IX, No. 3, pp. 93-134

29 *Diagnostic Routine in General Practice. C. R. Bird, Greensburg.
30 Treatment of Cerebrospinal Syphilis by Intraspinous Injections of Mercurialized Autoserum. G. W. McCaskey, Fort Wayne.
31 Modern Conception of One Form of Nephritis. C. P. Emerson, Indianapolis.

29. Abstracted in THE JOURNAL, Nov. 20, 1915, p. 1848.

Iowa State Medical Society Journal, Des Moines

March, VI, No. 3, pp. 99-146

32 Prophylaxis of Typhoid. F. C. Mehler, New London.
33 Nonmalignant Diseases of Prostate. B. C. Everall, Waterloo.
34 Symptoms of Surgical Conditions of Gallbladder. W. A. Rohlf, Waverly.
35 Gastrorrhagia. T. A. Moran, Melrose.
36 Surgery of Gastric Ulcer. V. B. Knott, Sioux City.
37 Results of Elliott Trephine Operation for Glaucoma. R. H. Parker, Des Moines.
38 Influence of Defective Vision on Play Life of Child. M. K. Heard, Iowa City.
39 Experiment in Child Inspection. L. C. Rockwood, Iowa City.

Journal of Cutaneous Diseases, Boston

April, XXXIV, No. 4, pp. 259-342

40 Eczema and Dermatitis, Analysis of Cases. W. J. Heimann, New York.
41 Deep Transverse Furrowing of Finger Nails Following Local Asphyxia. D. W. Montgomery, San Francisco.
42 Case of Actinomycosis; Cutaneous and Systemic. E. D. Newman, Newark, N. J.
43 Coolidge Tube and Corbett Radiometer. G. M. MacKee and J. Remer, New York.
44 Formalin Urticaria. M. L. Heidingsfeld, Cincinnati.

Journal of Infectious Diseases, Chicago

April, XVIII, No. 4, pp. 335-436

45 *Tuberculocidal Action of Arsenic Compounds and Their Distribution in Tuberculous Organism. A. Arkin and H. J. Corper, Chicago.

46 *Case of Infection of Lymph Glands With Bacillus Paratyphosus B. C. L. Cole, Fort Sam Houston, Tex.
47 *Simultaneous Injections of Streptococci and Dahlia in Guinea-Pig. W. H. Hoffman, W. B. McClure and L. W. Sauer, Chicago.
48 Correlation of Voges-Proskauer and Methyl-Red Reactions in Colon-Aerogenes Group of Bacteria. M. Levine, Ames, Iowa.
49 *Bactericidal and Fungicidal Action of Copper Salts. Studies on Biochemistry and Chemotherapy of Tuberculosis. L. M. Dewitt and H. Sherman, Chicago.
50 Epidemic of Appendicitis and Parotitis Probably Due to Streptococci Contained in Dairy Products. E. C. Rosenow and S. I. Dunlap, Minneapolis.
51 Production and Collection of B. Coli in Quantity on Synthetic Media. R. Bengis, New York.
52 Production of Hyperimmune Serum for Infectious Abortion in Mares. E. S. Good and W. V. Smith, Lexington, Ky.
53 Intradermal Sensitization. I. Intradermal Reactions to Emulsions of Normal and Pathologic Skin. J. H. Stokes, Chicago.
54 Id. Intradermal Reaction to Agar and Interpretation of Intradermal Reactions. J. H. Stokes, Chicago.

45. **Arsenic Compounds in Tuberculosis.**—The clinical reports in the literature as summarized by Arkin and Corper show that arsenic has not been demonstrated to have any specific action in tuberculosis, and that its value in this disease can be attributed only to its favorable effects on metabolism. Furthermore, in advanced tuberculosis it may even be harmful. In order further to determine the effect of arsenic compounds on the tubercle bacillus, and their value in the treatment of tuberculosis, the authors investigated the tuberculocidal action of sodium arsenite, sodium cacodylate, mercury cacodylate, atoxyl, arsacetin, and neosalvarsan, and have sought to determine whether or not these compounds enter the tissues of the tuberculous animal. An emulsion of human tubercle bacilli was treated at 37 C. with various dilutions of each arsenic substance for a period of twenty-four hours. They found that sodium arsenite in dilutions of from 0.1 to 0.0001 per cent. has no germicidal action on the tubercle bacillus in vitro in twenty-four hours at 37 C. Sodium cacodylate in dilutions of from 2 to 0.002 per cent. has no germicidal action on human tubercle bacilli in vitro. Mercury cacodylate in dilutions up to 0.001 per cent. has a germicidal action on human tubercle bacilli. The fact that sodium cacodylate has no tuberculocidal action indicates that the mercury cacodylate owes its effect to the presence of the mercury in the molecule. Atoxyl arsacetin and neosalvarsan in dilutions of from 1 to 0.001 per cent. have no germicidal action on human tubercle bacilli in vitro. The presence of arsenic in tissues of injected animals was also investigated by Arkin and Corper.

As a result of their experiments they noted that: Arsenic in simple crystalline salt form, as sodium arsenite, sodium cacodylate, atoxyl, arsacetin and neosalvarsan, administered to tuberculous animals parenterally, is found in the liver, lungs, kidneys, blood, spleen and tuberculous tissues (lymph glands of guinea-pigs and eye of rabbit), the concentrations in the various tissues not greatly differing. No evidence of accumulation in the tuberculous tissues was obtained. Incidentally, since tin forms salts like arsenic, in which the tin is in the negative radical, experiments were performed to test whether sodium stannate was germicidal toward the tubercle bacillus. It was found that even in concentrations as high as 1.0 per cent. for forty-eight hours at 37 C., it is nongermicidal toward the human tubercle bacillus; no evidence even of attenuation was observed.

46. **Paratyphosus B Infection of Lymph Glands.**—In the case cited by Cole a condition of multiple lymphadenitis seems to have been caused by an infection with *Bacillus paratyphosus B*, and, so far as could be ascertained, the disease developed without a preliminary manifestation of a typhoid-like, gastro-enteric, or cholera-like type of infection.

47. **Streptococci and Dahlia in Guinea-Pigs.**—It seems evident from the experiments performed by the authors that intravenous injection of dahlia in general streptococcal infections is not warranted as a therapeutic measure.

49. **Bactericidal and Fungicidal Action of Copper.**—The fact demonstrated by DeWitt and Sherman show that very low concentrations of copper will, if sufficient time is allowed, kill or inhibit the growth of many pathogenic organisms, would seem to suggest that copper salts, since their toxicity is low, should have a certain therapeutic value, especially in diseases caused by those bacteria which are easily killed or inhibited by the metal. It has but slight bactericidal action on the tubercle bacillus, but in the treatment of an infectious disease an inhibitory action may be, and probably is, quite as important as complete destruction. A dilution of 1:100,000 prevents the growth of tubercle bacilli in the test tube. Some organisms (notably *B. prodigiosus*) are markedly susceptible to the effect of copper, while others (as *Staphylococcus aureus* and the molds) are very resistant, surviving fifteen minutes' exposure to even 5 per cent. solution.

Journal of Laboratory and Clinical Medicine, St. Louis

March, I, No. 6, pp. 371-456

55 Typhoid in Detroit. H. F. Vaughan and W. F. Walker, Detroit.
56 Immunity in Tuberculosis. G. B. Webb, Colorado Springs, Colo.
57 Tissue Cellular Protein Poisons. J. G. Cumming, Berkeley, Calif., and J. S. Chambers, Ann Arbor, Mich.
58 Automatic Pipet. A. H. Rowe, San Francisco.
59 Schick Test. D. M. Griswold, Detroit.
60 Simple Test for Estimating Chlorids in Urine, Founded on Volhard's Method. J. J. Seelman, Milwaukee, Wis.
61 Rapid and Accurate Clinical Method for Estimation of Sugar in Small Quantities of Blood (Lewis and Benedict; Pearce; Myers and Fine). J. J. R. Macleod, Cleveland.

Journal of Medical Research, Boston

March, XXXIV, No. 1, pp. 1-130

62 Immune Reactions Against Tumor Growth in Animals With Spontaneous Tumors. M. S. Fleisher and L. Loeb, St. Louis.
63 *Experimental Bland Infarction of Myocardium, Myocardial Regeneration and Cicatrization. H. T. Karsner and J. E. Dwyer, Jr., New York.
64 Superficial Fatty Streaks of Arteries: Experimental Study. J. W. McMeans and O. Klotz, Pittsburgh.
65 *Bacteria Associated With Certain Types of Abnormal Lymph Glands. J. C. Torrey, New York.
66 Study of Involutional Changes Which Occur in Suprarenal Cortex During Infancy. R. W. Lewis and A. M. Pappenheimer, New York.
67 *Glioma of Cerebellum With Metastases. F. M. Jacob, Pittsburgh.
68 *Colloidal Gold Precipitating Substance in Cerebrospinal Fluid in Paresis. P. G. Weston, Warren, Pa.
69 Comparison of Natural Hemolytic Activity of Fresh Human Serum Against Guinea-Pig and Sheep Erythrocytes. H. W. Wade, New Orleans.
70 *Etiology of Rocky Mountain Spotted Fever. S. B. Wolbach, Boston.
71 *Etiology of Scarlet Fever. F. B. Mallory and E. M. Medlar, Boston.

63. **Bland Infarction of Myocardium, etc.**—This study by Karsner and Dwyer is one of a series having as the chief object the investigation of the pathologic alterations, both gross and microscopic, which constitute the changes occurring in the process of infarction. The studies were made on dogs in whom an artificial infarct of the right coronary artery was produced by ligation of the artery. The authors found that this leads to the formation of a focalized area of congestion, hemorrhage, edema, cloudy swelling, fatty degeneration, granular and hyalin necrosis of the muscle, and necrosis of the supporting connective tissue. An infarct is produced which fundamentally has the same characters as infarcts of the kidney, spleen and lung. The infarct of the myocardium is at first a hemorrhagic infarct and later undergoes decolorization and cicatrization. The removal of the necrotic material is accomplished by liquefaction and the action of polymorphonuclear leukocytes, fibroblasts, polyblasts and multinucleated giant cells. The authors state that there is no reason for assuming that true regeneration of muscle occurs in the healing of the myocardial infarct. Cicatrization of the myocardial infarct is due to proliferation of pre-existent connective tissue and blood vessels and is not materially different from cicatrization in other organs.

65. **Bacteria Associated with Abnormal Lymph Glands.**—Thirty cases in which the primary seat of the disease was in the lymphatic glands and ten cases in which the lymphatic glands were involved secondarily were examined by Torrey. A diphtheroid bacillus of one type or another was recovered from twenty-two of the forty cases. Lymph glands yielding positive cultures included such diverse pathologic conditions as Hodgkin's disease, chronic hyperplastic lymphangitis of obscure nature, lymphosarcoma, sarcoma, melanoma, endo-

thelioma, tuberculous adenitis and chronic lymphatic leukemia. These findings included diphtheroids of the most divergent types morphologically and culturally. The inoculation of monkeys with several representative strains of these diphtheroids has resulted negatively. An attempt was made to obtain a toxin by growing selected cultures for nine days in slightly alkaline sugar-free broth. These cultures were inoculated subcutaneously into guinea-pigs, but without definite results. Torrey claims that the theory of a causal relationship between a diphtheroid and Hodgkin's disease rests at present on an insecure basis. The few tests which Torrey has made for agglutinins have resulted negatively. No single type of diphtheroid is apparently found alone in the enlarged glands of Hodgkin's disease. Torrey also encountered strikingly pleomorphic and granular diphtheroids in such diverse conditions as perivascular endothelioma, hyperplastic lymphangitis of obscure origin and tuberculous adenitis. A number of other aerobic bacteria were encountered in these lymph glands, but, with the exception of staphylococcus, only sporadically of anaerobic bacteria.

Torrey describes in detail one, a slender, pleomorphic, strongly gram-positive rod with rounded ends, previously described by Bloomfield. The best mode of culturing the material in order to bring these anaerobic types to development was found to consist in burying the bits of tissue at various depths in a column of ascitic glucose agar with a reaction of about plus 2 to phenolphthalein. Although this bacillus was not specific for any single pathologic condition it was recovered in the highest percentage of instances (100 per cent.) from Hodgkin's glands. In five cases, three Hodgkin's and two lymphosarcoma, it was practically the only micro-organism developing in the culture tubes. Culturally all strains of this bacillus exhibited a marked uniformity and the conclusion that they consist of a single species was substantiated by agglutination experiments. Large amounts of this bacillus in a viable condition could be injected intraperitoneally or intravenously into rabbits without producing toxic symptoms. Animal inoculations with this anaerobic bacillus were as unsuccessful as with the aerobic diphtheroids recovered from the glands. Cultural findings in various types of abnormal glands have indicated that this bacillus does not stand in specific relationship to any definite pathologic condition. Torrey agrees with Bloomfield that the evidence suggests it is present as a parasite rather than as an active pathogen. He suggests the designation *Bacillus lymphophilus.*

67. **Glioma of Cerebellum with Metastases.**—The principal points of the case studied by Jacob are: A young adult giving a typical history of brain tumor extending over a period of two years. The necropsy showed a large glioma of the cerebellum which had extended into and obliterated the fourth ventricle and occupied most of the central white matter of the cerebellum. Smaller masses of a similar character were distributed on the ependyma of the lateral ventricle, the central canal of spinal cord and the leptomeninges. All of these masses were very cellular, unencapsulated, infiltrating and, to all microscopic appearance, malignant in character. Gland-like and rosette structures were noted in many parts of the tumors. The masses in the ventricle were discrete and had a nodular papillomatous structure, but the pia mater of the cerebrum, cerebellum and cord contained a patchy growth of gliomatous tissue extending over a considerable area, involving much of the surface of the brain and cord. No masses were found in any organs outside the cranial and spinal cavities.

68. **Colloidal Gold Precipitating Substance in Cerebrospinal Fluid in Paresis.**—An attempt was made by Weston to determine the nature of the substance in the cerebrospinal fluid obtained from cases of paresis which causes the precipitation of gold from colloidal suspension, but the result was a failure. Weston claims that it is not peptone, nor does his work confirm that of Matzkiewitsch.

70. **Etiology of Rocky Mountain Spotted Fever.**—The demonstration of a parasite in the lesions characteristic of experimental spotted fever in guinea-pigs and in monkeys is recorded by Wolbach. The virus was secured in the form of infected ticks—Dermacentor andersoni, Stiles (Dermacentor venustus, Banks). The organism corresponds in some respects with the description given by Ricketts of bodies which he found in the blood of human and experimental cases, and in the tissues and eggs of infected ticks. The classification of the organism is not yet clear; of its bacillary form and multiplication by transverse division there can be no question. The characteristics not common to most bacteria are its coloration with Giemsa's stain, the character of the reaction excited in tissues and its abundant distribution within smooth muscle cells of blood vessels. The peculiarities in distribution and the staining reaction would indicate that the organism partakes somewhat of the characteristics of spirochetes. All attempts at cultivation have thus far failed.

71. **Etiology of Scarlet Fever.**—Microscopic examination of the tissues from a child dying from scarlet fever on the second day following the appearance of the skin eruption showed large and small masses of gram-positive bacilli in some of the crypts of the tonsils, in the exudation on the surface of the tonsils, in slight depressions and erosions in the squamous epithelium covering the tonsils, the pillars of the fauces, the soft palate including the uvula, and the root of the tongue, in the trachea, in the lung. Smears made from swabs thrust deeply into the crypts of the tonsils in three early cases of scarlet fever (from ten to forty-eight hours after the appearance of the eruption) showed small and occasionally large masses of gram-positive bacilli similar to those found at postmortem examination. In two patients without tonsils smears made from the pillars of the fauces and from the soft palate showed similar bacilli in small clumps. Curettings of erosions on the soft palate of one of these patients showed masses of the same bacilli. In smears made only from the surface of the tonsils of two cases the findings are doubtful. Cultures of a bacillus resembling morphologically and in staining reactions that found in the postmortem tissues and in the smears from the tonsils and soft palate have been obtained in five instances, four times from the crypts of the tonsils and once, when the tonsils were absent, from the soft palate.

The organism is a strongly gram-positive bacillus (decidedly more so than the diphtheria bacillus). In culture the bacillus is slightly smaller than the diphtheria bacillus and varies from coccus like to large bacillary forms. The bacilli in tissues and in direct smears from scarlet fever cases are slightly larger than the organisms in culture, but otherwise resemble them. The authors feel warranted to infer from their observations that scarlet fever may be due to a strongly gram-positive bacillus (*B. scarlatinae*) which is less virulent than the diphtheria bacillus, but which infects practically the same localities and in severe cases may extend in the same way to adjoining tissues, especially the larynx, trachea and lungs. The bacillus of scarlet fever dies out quickly in the lesions, so that after the second or third day following the eruption it is difficult or impossible to demonstrate it, but it opens the way for streptococcus invasion and seems to favor its growth.

Kentucky Medical Journal, Bowling Green

March, XIV, No. 3, pp. 105-168

72 Intussusception in Infants. L. S. McMurtry, Louisville.
73 Fractures. J. B. Murphy, Chicago.
74 Difficult Presentations. E. Speidel, Louisville.
75 Verumontanum With Reference to Referred Symptoms. G. H. Day, Louisville.
76 Chronic Prostatitis. H. Bronner, Louisville.
77 Public Health. J. G. Foley, Pineville.

Laryngoscope, St. Louis

March, XXVI, No. 3, pp. 153-216

78 Papilloma of Nose. J. G. Callison, New York.
79 Treatment of Diphtheria of Tracheobronchial Tree. H. L. Lynah, New York.
80 Galvano-Cautery Operation for Lower Turbinate. G. Sluder, St. Louis.
81 Relation of Otolaryngology to Other Specialties. Team Work. J. C. Beck, Chicago.
82 Case of Tubercular Leprosy Involving Upper Air Passages. H. Arrowsmith, Brooklyn.
83 Syphilis of Lung. H. Hays, New York.

84 Case of Foreign Body in Throat of Child Three and One-Half Months Old. C. M. Robertson, Chicago.
85 Unusual Dental Case Simulating Antral Sinusitis. H. B. Decherd, Dallas, Tex.
86 Injury to Soft Palate and Uvula in Tonsillectomies. J. A. Thompson, Cincinnati.

Maine Medical Association Journal, Portland

March, VI, No. 8, pp. 293-324

87 Comparative Values of Some Methods of Diagnosis in Digestive Diseases. R. F. Chase, Portland.
88 Osteomyelitis of Right Femur Complicated by Fracture Simulating Sarcoma. F. H. Jackson, Houlton.

Medical Record, New York

April 1, LXXXIX, No. 14, pp. 589-630

89 Springs of Saratoga — Their Value in Treatment of Disease. W. G. Thompson, New York.
90 Surgical Treatment of Gastric and Duodenal Ulcers. G. Woolsey, New York.
91 Indications for Surgery or Deep Roentgen Therapy for Myomata and Metropathies. C. A. Pfender, Washington, D. C.
92 Urologic Case That Teaches Necessity of Science, System and Common Sense. G. S. Peterkin, Seattle.
93 Pulmonary Tuberculosis and Body Weight. I. N. Kahn, New York.
94 *Study of Blood With New Stain. B. Lemchen, Chicago.
95 Fistula of Rectum. C. J. Drueck, Chicago.

94. **Study of Blood with New Stain.**—The stain Lemchen uses for blood smears consists of a saturated solution of benzidin in absolute alcohol. After making the blood smears on slides he puts this solution on it for about half a minute. This fixes the blood on the slide and also impregnates the stain. He then adds hydrogen peroxid. After about half a minute the slide is washed in water and dried in filter paper. The red cells are stained blue. Nucleated red cells, the cells together with the nucleus, are also stained blue. White cells do not take the stain. The blood platelets do not stain. If the blood smears stand for a couple of hours so that fibrin will form, the fibrin also stains blue. Lemchen concludes from this that the red cells and the white cells have different origin, that the platelets have not their origin in the nucleus of the red cells and also that the fibrin apparently has the same composition as the red cells. Whether or not the breaking down of the red cells forms a substance necessary for the coagulation of the blood Lemchen admits he is unable at present to say, but on the same reasoning, he assumes that in all probability, this process is originated by the red cells. This he suggests might explain the great destruction of red cells in pernicious anemia. With this same reasoning it might be assumed that the agglutinins in typhoid might have their origin in the red blood cells. This also might account for the marked anemia in typhoid, and also for the increase in size of the spleen and the great activity of the lymph and hemolymph glands.

New Orleans Medical and Surgical Journal

March, LXVIII, No. 9, pp. 567-627

96 Treatment of Extra-Uterine Pregnancy. A. P. Heineck, Chicago.
97 Pellagra. W. L. Seccor, Kerrville, Tex.
98 American Leishmaniosis of Skin and Mucous Membranes. A. Laveran.

New York Medical Journal

March 25, CIII, No. 13, pp. 577-624

99 Orientation and Equilibration. A. B. Duel, New York.
100 Military Preparedness From Medical Standpoint. E. P. Fowler, New York.
101 Treatment of Duodenal Ulcer. A. Bassler, New York.
102 Guelpa's Starvation Treatment of Diabetes. J. H. Kellogg, Battle Creek, Mich.
103 Disease in Apparently Healthy Colored Girls. G. Wilson, Baltimore.
104 Migraine. Its Cause, Treatment and Cure. A. H. M.de S. Remy, Porto Rico.
105 Prevention of Fire in Old Buildings Housing Insane. J. A. Jackson, Philadelphia.
106 Elements of Psychanalysis. A. D. Dryfoos, New York.
107 Nervous Symptoms in Visceral Diseases. A. A. Eshner, Philadelphia.

Ohio State Medical Journal, Columbus

March, XII, No. 3, pp. 161-232

108 Resection of Posterior Roots of Spinal Cord for Cure of Spastic Paraplegias. E. M. Blahd, Cleveland.
109 Rupture of Male Urethra. E. O. Smith, Cincinnati.
110 Sclerocorneal Trephining for Glaucoma. A. Timberman, Columbus.
111 Negro Health Problem in Cities. J. H. Landis, Cincinnati.
112 Anemia; Diagnosis of Underlying Cause and Treatment. A. E. Osmond, Cincinnati.
113 Smallpox in Ohio. F. G. Boudreau, Columbus.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

March, XXIV, No. 3, pp. 69-100

114 Use of Tuberculins in Treatment of Tuberculosis. F. J. Ridge, Kansas City, Mo.
115 Can Early Diagnosis of Pulmonary Tuberculosis Be Made? S. J. Wolferman, Fort Smith, Ark.
116 Eugenics. M. A. Warhurst, Sylvian.
117 Injuries of Brain; Report of Case. J. E. Gilcreest, Gainesville, Tex.
118 Some Inflammatory Conditions About Orbit. J. G. Dorsey, Wichita, Kan.
119 Compound Fracture of Tibia and Fibula; Report of Case. F. M. Sanger, Oklahoma City.
120 Treatment of Hyperthyroidism. L. F. Watson, Oklahoma City.

Tennessee State Medical Association Journal, Nashville

March, VIII, No. 11, pp. 467-504

121 How and When to Use Digitalis. E. R. Zemp, Knoxville.
122 Scopolamin-Morphin Anesthesia — Twilight Sleep. J. M. Troutt, Knoxville.
123 Allen Treatment of Diabetes. E. McNabb, Knoxville.
124 Cervical Tear. W. N. Lynn, Knoxville.
125 Curse of Serpent. S. M. Miller, Knoxville.
126 Fracture of Capitellum. H. H. McCampbell, Knoxville.
127 Knoxville, Medical Center. C. H. Davis, Knoxville.
128 Knox County Medical Society. C. Deaderick, Knoxville.
129 Fascia Fat vs. Egg Membrane in Traumatic Defects of Skull et al. B. B. Cates, Knoxville.

Washington Medical Annals

March, XV, No. 2, pp. 81-179

130 *Cases of Ulceration and Perforation of Stomach. D. S. Lamb, Washington.
131 Diagnosis of Case of Tremor. T. A. Williams, Washington.
132 Experiences in Serbia. L. Tayler-Jones, Washington.
133 Case of Subsidence Through Roentgenotherapy of Hypophysis Cerebri. T. A. Williams, Washington.
134 Responsibility of Physicians With Respect to Insane Patient. F. A. Fenning, Washington.
135 Protection of Child From Tuberculous Kindred Ills Through Adequate System of School Hygiene. W. C. Gwynn, Washington.
136 Support of Health Office. H. W. Wiley, Washington.
137 Case of Postoperative Tetanus, After Clean Operation for Strangulated Femoral Hernia. C. N. Chipman, Washington.
138 End-To-End Arterial Anastomosis of Radial Artery Following Transfusion. D. L. Borden, Washington.
139 Use of Percy Cautery in Carcinoma of Uterus. J. D. Rogers, Washington.

130. **Ulceration and Perforation of Stomach.**—One of the cases cited by Lamb is that of a colored woman, aged 23, who had had a cough for two months, with dulness over both lungs and hemoptysis. There was an oval tuberculous ulcer of greater curvature, about 2½ inches from the pylorus; the ulcer half an inch in diameter; edges thickened and undermined; floor formed by the muscular coat. There were a few follicular ulcers in the duodenum. The necropsy showed much emaciation; an oval tuberculous tumor the size of a pigeon egg in right cerebellar hemisphere; lungs generally adherent and studded with tubercles; peritoneum generally adherent and studded with tubercles; greater omentum contracted into a band and filled with tubercles; mesentery also contracted into a solid lump, its lymphatic nodes tuberculous; liver contained a few large cheesy tubercles; spleen filled with miliary tubercles; tuberculous ulcers in ileum and cecum; tubercles in cortex of each kidney.

Wisconsin Medical Journal, Milwaukee

March, XIV, No. 10, pp. 407-452

140 Typhoid Prevention by Bacterial Vaccine. J. M. Whalen, U. S. Army.
141 Taking Blood for Wassermann Test. W. F. Lorenz, Mendota.
142 Medical Inspection in Public Schools. E. B. Brown, Beloit.
143 School Medical Inspection With Special Reference to Detection of Diphtheria Carriers. J. R. Newman, Madison.
144 Physical Education and Its Relation to Medicine. C. B. Sputh, La Crosse.
145 Bone Transplantation in Deformities of Nose; Report of Three Cases. F. S. Cook, Eau Claire.
146 Case of Thrombo-Angeitis Obliterans. E. Evans, La Crosse.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

December, 1915, XXXVIII, Part 4, pp. 391-476

1 Ophthalmologic Observations of Hughlings Jackson and Their Bearing on Nervous and Other Diseases. J. Taylor.
2 *Sensory Field of Facial Nerve: Symptomatology of Geniculate Ganglion. J. R. Hunt.
3 Case of Bilateral Lesion of Occipital Lobes With Retention of Macular as Distinct From Panoramic Vision. B. Bramwell, J. S. Bolton and W. Robinson.

2. **Sensory Field of Facial Nerve.**—A very detailed study of the facial nerve made by Hunt had for its purpose largely the determination of the symptomatology of inflammation of the geniculate ganglion. This is said to be as follows: (*a*) Pain and sensory disturbances in facial neuritis. (*b*) Neuralgic affections; primary tic douloureux, reflex otalgia, herpetic and tabetic otalgia. (*c*) A sensory pathway for the direct transmission of irritative impulses to the facial nucleus, thus favoring the production of facial twitchings and spasms. (*d*) Herpetic inflammations of the geniculate ganglion, a syndrome characterized by an eruption of herpes zoster in the geniculate zone, usually associated with facial palsy and often with auditory symptoms. The cutaneous zone of the geniculate ganglion is represented on one or more of the following landmarks of the external ear, namely, the concha, external meatus, tragus, antitragus, incisura intertragica, antihelix, fossa of the antihelix, superior portion of the external surface of the lobule, within the auditory canal and on the tympanic membrane. There is also reason to believe that the geniculate may in certain cases participate with the ninth and tenth ganglia in the innervation of a cutaneous strip on the posteromesial surface of the auricle and adjacent mastoid region.

Hunt says that it has been suggested that an eruption occurring within what he describes as the geniculate zoster zone may be of trigeminal, cervical, or glossopharyngeal vagal origin. Hunt maintains, however, that the occurrence of isolated herpes zoster oticus in this zone should be of either trigeminal or cervical origin is readily excluded by the small size and the peculiar location of the eruptive manifestations. Some of the cases are certainly of glossopharyngeal and vagal origin; that the other cases are of geniculate origin is shown by the almost constant association of facial palsy due to the proximity of the motor fibers of the seventh to the affected ganglion. Were these cases of glossopharyngeal or vagal origin, facial palsy should not occur so constantly, rather pharyngeal and laryngeal palsies or symptoms of vagal irritation. In such lesions of the vagal ganglion one would expect symptoms of pneumogastric irritation, namely, coughing, singultus, bradycardia, nausea and vomiting and yet these distinctively pneumogastric symptoms were absent in the thirty-five cases of pure herpes oticus, which Hunt analyzed in differentiating the geniculate zone.

British Medical Journal, London

March 11, I, No. 2880, pp. 365-400

4 *Case of Splenic Anemia With Splenectomy. L. Humphry, C. Allbutt, F. Deighton and D. C. Hare.
5 Principles of Treatment and Their Application to Wounds. C. F. M. Saint.
6 War Surgery. A. M. Forbes.
7 Work at Base Hospital. W. Rankin.
8 *Ulceromembranous Stomatitis and Gingivitis Among Troops on Active Service. F. B. Bowman.

4. **Case of Splenic Anemia with Splenectomy.**—The most interesting feature of this case is the record of the behavior of the polymorphonuclears and lymphocytes. Even before the operation their numbers varied widely. The first count showed the leukopenia usually associated with the disease (4,500), but later there was a high leukocytosis (33,000) coincident with the period of increased irregularity of temperature. After the operation the variations in the chart followed in the main the usual course. There was an early increase in the polymorphonuclears (77 per cent.) succeeded in about six weeks by a sharp rise in the lymphocytes (55 per cent.). A high polymorphonuclear count in the fifth week (68 per cent.) followed a few days of high temperature, which supports the observation of Fuhs that removal of the spleen does not abate the capacity for reaction against infection. Before the operation the test for the fragility of the red corpuscles was carried out by Thursfield's method with unwashed corpuscles and gave a normal result. The urine was also tested for the presence of hemolysins and a positive reaction obtained. About three months after the operation the patient seemed quite well, and said she felt well. She had done all her housework almost from the date of leaving the hospital. Her tongue, pulse, temperature were all normal; appetite good, bowels regular. Complexion now well colored, and all the tallowy tint had disappeared. The white cells numbered 41,000 per cm.; differential leukocyte count; Polymorphonuclears, 48 per cent.; lymphocytes small and medium, 44 per cent.; large mononuclears, 5 per cent.; hyalins, 1 per cent.; basophils, 2 per cent. and nucleated red cells, 1 per cent. of leukocytes counted.

8. **Ulceromembranous Stomatitis and Gingivitis.**—The following treatment was found by Bowman to have remarkably rapid and favorable results in these cases:

	gm. or c.c.	
Vinum ipecacuanhae	16	℥ ss
Glycerinum	4	ʒ j
Liquor arsenicalis	32	ad ℥ j

M. Sig.: To be used as a mouth wash; do not swallow. Label "poison."

In cases in which the gums only are affected the solution can be applied carefully to the gums and pockets around the teeth, after cleaning away the pus. A small applicator should be used. In cases in which there is ulceration elsewhere in the mouth or throat, the ulcer should be wiped out thoroughly twice every day with the above solution. All patients, whether or not the gums be infected, are instructed to drop 10 or 15 drops of the mixture on a toothbrush twice a day and to brush the teeth and gums vigorously. Employing this treatment the condition clears up with remarkable rapidity. Even in advanced cases, in Bowman's experience, the alteration in the state of the mouth is obvious in three days. The ulcers are seen to be healing; the foul odor of the breath disappears; the teeth cease to be tender. The general depression clears up, and within a week the patients who before treatment could not masticate solid food, can eat such food without discomfort and with enjoyment.

Dublin Journal of Medical Science

March, III, No. 531, pp. 155-226

9 Case of Chyluria. J. A. Lindsay.
10 Certification of Insured Persons in Ireland. R. J. Rowlette.
11 New Bismuth Medium (Skirol) for Pyelography. A. A. McConnell.
12 Two Cases of Aneurysm Due to Bullet Wounds. C. A. Ball.
13 Acute General Tuberculosis With Left Oculomotor Paralysis After Measles. J. Moore.

Edinburgh Medical Journal

March, XVI, No. 3, pp. 169-256

14 Surgical and Antiseptic Values of Hypochlorous Acid (Eusol). J. Fraser and H. J. Bates.
15 Employment of Female Nurses in Male Wards of Mental Hospitals in Scotland. G. M. Robertson.
16 Report on Radium Treatment at Royal Infirmary, Edinburgh, During Year 1915. D. Turner.
17 Case of Myotonia Congenita (Thomsen's Disease) in Child. J. Thomson.

Glasgow Medical Journal

March, LXXXV, No. 3, pp. 161-240

18 Pyuria. D. Newman.
19 Nasal Affections and Deafness. W. S. Syme.
20 Towns-Lambert Treatment of Drug Addiction. D. K. Henderson.

Journal of Laryngology, Rhinology and Otology, London

March, XXXI, No. 3, pp. 73-120

21 Skin Grafting in Mastoid Operations. H. J. Marriage.
22 Radical Mastoid Operation. J. S. Fraser.

Journal of Tropical Medicine and Hygiene, London

March 1, XIX, No. 5, pp. 53-64

23 Peripheral Neuritis in Jamaica. C. R. Edwards.
24 Pathogenic "Fecalis" Streptococci in Anglo-Egyptian Sudan. A. J. Chalmers and A. Marshall.

Lancet, London

March 11, I, No. 4828, pp. 545-600

25 Effects of High Explosives on Central Nervous System. F. W. Mott.

26 Beriberi With Special Reference to Prophylaxis and Treatment. W. H. Willcox.
27 *Unusual Form of Gunshot Arteriovenous Aneurysm. C. A. Morton.
28 Diet as Factor in Causation of Mental Disease. C. Mercier.
29 *Lower Uterine Segment; Its Origin and Its Boundaries. E. H. Tweedy.
30 *Search for Typhoid Carriers. A. Stokes and C. Clarke.

27. **Gunshot Arteriovenous Aneurysm.**—In the case recorded by Morton there was a communication between the femoral artery and vein, due to the passage of a portion of a projectile through them, and on the side of the artery opposite to the communication, in cases in which the portion of projectile had passed out of the artery, was an aneurysmal sac. In cases in which the portion of projectile had penetrated the vein, namely, on the side of the vein farthest from the artery was what Morton calls a venous aneurysm, namely, a cavity in the tissues containing old blood clot, communicating with the vein. It was an aneurysmal varix with, in addition, an arterial aneurysm and a venous aneurysm. It is interesting to note that in this case there was nothing to make either the patient or any surgeon who examined him suspect injury to the large vessels of the thigh until eighteen days after the injury.

29. **Nature of Lower Uterine Segment.**—Tweedy points out that the cervix is a tissue which does not easily tolerate a stretching force. If the elongated cervix of prolapse were really a process of stretching it would be pulled thin as a piece of twine; instead, it remains of normal thickness, no matter how greatly it is strained. We must, then conclude, he says, that the cervix is not a stretchable structure but, on the other hand, that it has a power of extraordinary rapid growth when stimulated by continuous pressure. In a case reported by Jellett a small cervical stump left after the performance of a subtotal hysterectomy was firmly stitched to the aponeurosis of the abdominal wall in an effort to cure prolapse. It remained fixed in this position, but prolapse recurred and it was of so extreme a nature that the os protruded for many inches through the vulva. This enormous elongation was not accompanied by diminution of its diameter, but rather the reverse, and in this instance the increase of the cervix must have amounted to about fifteen times its original size. Further, the vaginal portion of the cervix when not subjected to pressure does not enlarge.

30. **Search for Typhoid Carriers.**—Eight hundred and ten cases were examined by Stokes and Clarke with these results: Temporary intestinal, thirty-two, or 4.0 per cent.; temporary urinary, thirty-three, or 4.0 per cent.; chronic intestinal, eleven, or 1.6 per cent.; chronic urinary, 2, or 0.24 per cent. Of the temporary urinary carriers only two of the thirty-three found became chronic carriers. The thirty-three temporary carriers were treated with hexamethylenamin for about ten days, and then after an interval of one week were reexamined. All consistently proved negative on four consecutive examinations. The two who excreted bacilli after the twelfth week from commencement of the illness, and in one case up to the twentieth week, both suffered relapses in a late period of convalescence. They both continued to excrete up to the eighth week in one case, and the tenth week in the other, after the inception of the relapse. They were both apparently benefited by the treatment.

Bulletin de l'Académie de Médecine, Paris

February 29, LXXV, No. 9, pp. 245-264

31 Pseudo-Cancer of the Stomach of Syphilitic Nature. G. Hayem.
32 Canned Whole Meals for Soldiers. (De l'introduction des boites-repas dans le régime alimentaire des troupes se battant en rase campagne.) E. Maurel.
33 Localization of Projectiles in the Tissues. (Dispositif permettant la mesure rapide et par simple lecture de la profondeur des projectiles dans les tissus par la radioscopie.) V. Mahar.
34 Differentiation of Direct and Indirect Powder Marks. (Sur le diagnostic différentiel entre les traces d'enfumage dues à la poudre dans les coups de feu tirés à bout portant et les taches bleuâtres du plomb à l'état pulvérulent.) Ducellier.

Paris Médical

March 4, VI, No. 10, pp. 229-272

35 Treatment of Bacilli Carriers. (Le traitement des porteurs de germes, bacille diphthérique, méningocoque, bacille typhique.) P. Carnot.
36 Employment of Bandages for Irrigation of Wound-Surfaces With Therapeutic Solutions, and the Draining of Wounds. A. E. Wright.
37 *Emetin in Treatment of Amebic Abscess of the Liver. C. Dopter.
38 The Art of the Therapeutist. (Grandes et petites médications.) L. Rénon.
39 Treatment of Infected or Doubtful Wounds in War. (Traitement des plaies de guerre infectées ou douteuses.) M. Chaput; (Traitement des plaies infectées par le sérum de Leclainche et Vallée.) M. Cazin; (Médicaments et blessures de guerre.) M. Deguy.

37. **Emetin for Liver Abscess.**—Dopter relates further successful application of emetin in amebic disease of the liver, having now a record of twelve cases. While paying full credit to the marvelous efficacy of emetin in amebic disease, he insists that surgical measures are still indicated as otherwise. Only the combination of the two can be relied on.

Presse Médicale, Paris

March 2, XXIV, No. 13, pp. 97-104

40 Diagnosis of Complete Interruption of Trunk Nerve. (Le diagnostic de l'interruption complète des gros troncs nerveux des membres.) Dejerine and J. Mouzon.
41 Stirrup Method of Extension for Fractured Leg. (Traitement des fractures du membre inférieur par l'extension continue au moyen de l'étrier de Finochietto.) P. Chutro.

March 9, No. 14, pp. 105-112

42 Colloidal Gold in Treatment of Typhoid. M. Labbé and Moussaud.
43 *Suturing the Synovial Membrane to the Skin for Suppuration in the Knee. (Le traitement des arthrites purulentes du genou par l'arthrostomie ou marsupialisation de la synoviale.) G. Fieux.

43. **Open Treatment of Purulent Disease of the Knee.**—Fieux remarks that there is general harmony of opinion among army surgeons now in regard to most of the current wounds of war, but the best treatment for an infected wound of the knee is still an open question. The difficulty of draining the knee joint seems to be the chief obstacle, and he thinks that arthrostomy is a great improvement over the usual methods of draining in vogue. The limb is turned to drain automatically after a crucial incision has been made and the tips of the four flaps sutured back, thus opening up the synovial membrane like a kangaroo's pouch. Each incision is 5 or 6 cm. long; the pouch thus left open admits the thumb readily. If necessary he would make more than one of these openings, but one always proved sufficient in his experience. In one particularly severe case in which the arthritis had continued a progressive course with much accumulation of pus, it healed in seventeen days after the arthrostomy. Seven cases are described in detail to show the advantages of this suppression of drains and open pouch drainage.

Archiv für Gynaekologie, Berlin

CV, No. 1, pp. 1-150. Last indexed Dec. 18, 1915, p. 2203

44 *Some of the Physiologic Conditions of the Newly Born. (Eine klinische Studie über etliche der physiologischen Verhältnisse Neugeborener.) L. Isachsen.
45 *Pregnancy and Delivery After Treatment of Genital Prolapse by Fastening Uterus in Anteversion to the Vaginal Edge; Two Cases. (Ueber Schwangerschaft und Geburt nach Interpositio uteri vesico-vaginalis.) W. Weibel.
46 Intraperitoneal Hemorrhage From Graafian Follicle or Corpus Luteum Not Probable. (Können grosse intraperitoneale Blutungen aus Graafschen Follikeln oder Corpus luteum-Bildungen ohne Vorhandensein von Schwangerschaft entstehen?) H. Forssner (Stockholm).
47 *Mechanism Influencing Presentation at Delivery. (Die Ursachen der Kindeslagen.) F. Schatz. To be continued.
48 *Determination of Protective Ferments in Histologic Sections. (Nachweis der Abwehrfermente im histologischen Schnitte.) P. Hüssy and T. Herzog.

44. **Various Physiologic Changes in the Newly Born.**—This sixty-four page article issues from the University clinic for women at Christiania. It is based on the study of 285 infants born to clinically healthy women. The average weight was 3,558 gm. which is above the average recorded in other countries in accessible literature. The fluctuations in the weight, the temperature, conditions in regard to the umbilicus, various types of weight curves, comparison of first and later children and other data are tabulated for comparison, and nearly four pages of bibliography are appended.

45. **Pregnancy After Wertheim's Operation for Genital Prolapse.**—When Wertheim proposed this method of treating genital prolapse by drawing the fundus of the uterus

over forward and suturing it to the vagina, he had only women past the childbearing age in mind, or those that had been artificially sterilized. Others disregarded these restrictions, and this communication from his clinic reports two cases in which conception had occurred afterward; three others are cited from the literature. In two of the total five cases the pregnancy progressed normally until near term and cesarean section was successfully done. In the other cases perforation of the fetal skull became necessary or abortion had to be induced. The conditions with this interpositio uteri vesico-vaginalis resemble closely those with vaginofixation, but the posterior wall of the bladder rests on the posterior uterine wall now become anterior.

47. **Causes of Different Presentations.**—Schatz describes ingenious devices with which he has apparently demonstrated that the weight of the different parts of the fetus is not a decisive factor in the way the fetus presents. The centers of gravity fall outside the points where they would have to be if gravity were the determining factor. This article is only one of a long series recording research on the mechanism of childbirth. His experiments seem to show that the specific gravity of the various parts of the fetus, in connection with the specific gravity of the fluid in which it floats, is what determines the presentation. This explains the different positions of the fetus at different times as the various parts develop. He says that he has been unable to find in the textbooks any mention of a center of specific gravity, but that this is the key to the presentation of the fetus, he is convinced.

48. **Protective Ferments in Histologic Sections.**—Hüssy and Herzog repeated Rollett's tests of specimens of serum from pregnant women left in contact with scraps of placenta tissue for sixteen or twenty-four hours. The scraps of placenta were then stained, and examined under the microscope in comparison with scraps in contact with control serum. (Rollett's communication on the subject was mentioned in THE JOURNAL, Oct. 31, 1914, p. 1613.) They found changes in the aspect in some of the cases but they were not so pronounced and not so constant as Rollett had found them, only two in eight of the cases presenting them. The action was pronounced only on the connective-tissue stroma, the specific placenta tissue not being affected, and hence the test gives no specific diagnostic response. They conclude that the method is of no use for the diagnosis of pregnancy, and the findings throw no light on the specific nature of the protective ferments.

Berliner klinische Wochenschrift

February 21, LIII, No. 8, pp. 177-208

49 *Prickly Heat. (Entstehung und Beseitigung des Juckens. D. Miliaria rubra et alba.) P. G. Unna. To be continued.
50 Experiences With Typhus; 134 Cases. (Fleckfieberbeobachtungen.) F. Meyer, A. Klink and E. Schlesies.
51 War Epidemics in Previous Wars and the Present War. (Die Kriegsseuchen im Weltkrieg.) B. Möllers.
52 *Infectious Jaundice; Weil's Disease. (Ueber die pathologische Anatomie der ansteckenden Gelbsucht.) H. Beitzke.
53 Indications for and Outcome of Operative Treatment of War Wounds of Peripheral Nerves. (Kriegsverletzungen des peripheren Nervensystems.) R. Cassirer. Concluded in No. 9.
54 The War Literature in Domain of Internal Medicine. (Die Kriegsliteratur aus dem Gebiet der inneren Medizin.) Reckzeh. Concluded.

February 28, No. 9, pp. 209-240

55 Prickly Heat. (Entstehung und Beseitigung des Juckens. E. Miliaria tropica.) P. G. Unna. To be continued.
56 *Edema Disease in Prisoners of War Not an Infectious Disease. (Besteht ein Zusammenhang der Oedemkrankheit in den Kriegsgefangenenlagern mit Infektionskrankheiten?) Jürgens.
57 Catarrhal Intestinal Disease, Typhus, Dysentery and Mixed Infections. (Ueber Darmkatarrh, fieberhaften Darmkatarrh, Typhus, Ruhr und Mischinfektionen.) J. Arneth.
58 Treatment of Wounds of Nerves. (Behandlung der Nervenverletzungen.) S. Loewenthal.
59 Blood-Alkali-Agar Kept in Cotton-Plugged Vessel, Always Ready to Use. (Ist es möglich, einen sofort brauchbaren Dieudonnéagar herzustellen, ohne die Zusammensetzung des Substrates zu verändern?) H. C. Hall.
60 Epidemic Febrile Retronasal Inflammatory Process. (Ueber die infektiöse Entzündung des Nasenrachenraums — Angina retronasalis.) W. Blumenthal.
61 Indications for and Results of Operative Treatment of Wounds of Peripheral Nerves. (Indikation und Erfolge bei der operativen Behandlung der Kriegsverletzungen des peripheren Nervensystem.) R. Cassirer. Concluded.

49. **Prickly Heat.**—Unna says that if the skin is kept dry, miliaria rubra and alba subside as rapidly as they have developed but otherwise they are liable to breed eczema. All that is necessary in treatment is to keep the skin dry and powder thick with a drying, antiparasitic powder such as magnesium carbonate and talc, each 50 parts, with sulphur and zinc oxid, each 2.5 parts. As the vesicles dry up the itching ceases. The content of the vesicles has no connection with the sweat, but the still unknown germs causing the trouble find a good culture medium in sweat.

52. **Pathologic Anatomy of Infectious Jaundice.**—Beitzke describes the concordant necropsy findings in five cases of Weil's disease. He was able to find in two cases a total of three spirochetes resembling those recently described by Huebner and others. It is evident that the spirochetes rapidly disappear not only from the blood but from the internal organs as well. The severity of the disease and the protracted convalescence may be responsible for liver or kidney disease later. There is no doubt that it is a septic general disease with innumerable small extravasations, severe pathologic changes in the liver and degeneration of the skeletal muscles. The jaundice is not the result of obstruction; the bile ducts were always found open, the bile never thickened. But the toxic injury apparent in the liver amply explained the jaundice.

56. **Edema Disease Among Prisoners of War.**—Jürgens compares conditions in various concentration camps of prisoners of war, the evidence demonstrating that typhus, relapsing fever and other infectious diseases have nothing to do with what he calls edema disease. This is a deficiency disease, like beriberi, and develops only in those on a too one-sided diet or inadequate diet. When the men were first taken prisoners they had been suffering from privations, and when they reached the camp they were enfeebled and many came down with imported camp diseases. The edema disease that developed during convalescence was for a long time regarded as part of the infectious syndrome, but this was a mistake. The edema sickness results from a metabolic upset from dietary deficiency, and wherever this was recognized and a more varied diet provided, the men soon threw it off or its appearance was averted. The first symptoms are progressive weakness and lassitude, an apathetic aspect, flabby, yellowish skin and pale mucous membranes; then suddenly the face and lips swell, and there may be symptoms suggesting scorbutus, with serious bowel trouble. In some of the camps, the disease did not present the full syndrome until the men were set to work digging. This upset the precarious balance, and from 10 to 20 per cent. of the men then developed at once the edema and pains in the legs. The edema sickness was most prevalent among the camps of Russian prisoners, but in two camps with British, French and Russians all were undernourished and were weak when brought in, and many showed symptoms of the edema disease. In these camps the British suffered most from it, the French least. The latter received numerous packages from home which kept their diet varied. In the two mixed camps cited, no typhus or relapsing fever developed at any time, notwithstanding the prevalence of lice and that edema disease was common at first until the necessity was realized for providing a better balanced diet.

Deutsche medizinische Wochenschrift, Berlin

February 24, XLII, No. 8, pp. 213-240

62 *Treatment of Acute Inflammation in Air Passages of Infants. (Behandlung der akuten Entzündungen der Luftwege bei den Säuglingen.) E. Peiper.
63 Specific Serodiagnosis of Dysentery. (Zur Aetiologie der Ruhr.) U. Friedmann and Steinbock.
64 Treatment of Tetanus. (Zur Tetanusfrage.) A. A. L. Menzer.
65 Localization of Metal Foreign Bodies in the Tissues. (Die Lagebestimmung von Fremdkörpern nach Gillet.) H. Gocht.
66 Uniform Records for Length of Stumps. (Einheitliche Längenmessung der Amputationsstümpfe.) F. Bähr.
67 Ultrafiltration in Manufacture of Pharmaceuticals. (Bedeutung der Ultrafiltration für die Gewinnung von Arzneimitteln.) F. Mayer.
68 *Ultraviolet Rays in Treatment of Typhoid Bacilli Carriers. (Typhusbazillenträgerbehandlung durch Erregung "ultravioletter Fluoreszenz" am Orte der Toxinbildung.) V. Hufnagel, Jr.
69 Blood-Alkali Dry Culture Medium Ready for Use. (Lentzsches Blutalkalitrockenpulver zur Bereitung von Choleranährböden in Feldlaboratorien.) T. Fürst.

70 War Wounds of Urogenital Apparatus. (Kriegsverletzungen des Urogenitalsystems.) Stutzin and Gundelfinger. Commenced in No. 7.

62. **Acute Inflammation of Infant's Air Passages.**—Peiper reiterates that not the cold air brought into the room, but the kiss given the baby or other contact with some one suffering from a "cold" is the cause of the rhinitis or pharyngitis in the infant. In institutions, if one of the attendants has a "cold," the infants in her charge all contract it. The most varied germs may be found in these "colds" in infants; certain epidemics may be exceptionally mild or may be accompanied by special and severe complications, pneumonia, otitis, etc. In any event they need full attention as they may lead to serious danger for the child. Even simple rhinitis calls for active measures, ensuring the permeability of the nose before each feeding, swabbing out the nose with a disinfectant or softening crusts with medicated oil. If the mucosa is much swo'len, he instils a little 1:5,000 epinephrin solution into the nostrils from a dropper several times a day. Young infants do not know how to breathe through the mouth, and it may be necessary to feed with a spoon or stomach tube. The rhinitis may be unsuspected diphtheria; more than 50 per cent. of all cases of diphtheric rhinitis terminate fatally, and they are often the source of epidemics. Antitoxin can be given as freely to infants as to older children. With beginning otitis, warm 10 per cent. phenolglycerin twice a day with moist heat may relieve. Paracentesis is not indicated unless there is much restlessness, violent pain and high fever. If the mastoid process grows red and swollen the child should be taken to a specialist at once. If the nasopharynx is involved, finely pulverized boric acid should be blown in or the region sprayed with hydrogen dioxid (tablespoonful in a glass of water). The nose should not be rinsed out. A sweat pack often proves useful in rhinopharyngitis; the child is kept for five minutes in a bath at 38 C. and then after the respiration has been stimulated with a dash of a little cold water, the child is wrapped in the bath towel and in a thick blanket and transferred to its warmed crib and warmly covered and given a bottle of hot tea. After an hour the usually sleeping child is taken up and dried and dressed in warmed clothing.

With laryngitis and pseudocroup the child is kept in bed and given a sweat pack. The neck over the larynx is rubbed twice a day with salve and a bandage applied. Dry warm bandages he thinks are better than moist heat. Internally he gives some calomel and antimony preparation or aromatized ammonia preparation. During the attack of croup the child is set up, applying hot sponges to its neck and letting it drink a bottle of sweetened weak tea or milk with some alkaline. It is then put back in the warmed bed and soon gets to sweating, and ipecac may not be required. As soon as the first signs of laryngitis appear the air of the room should be kept moist with spray or steam or the spray or steam held in by a tent-like arrangement over the crib. The rhinitis may entail retropharyngeal abscess. The snoring breathing, fever, and stiff sideways bending of the head are explained by discovery of a fluctuating tumor back of the velum. Incision is required at once, for spontaneous opening might flood the air passages with pus, using a double edged knife, wound to the tip with adhesive plaster. The moment the pus begins to emerge, the child is bent over forward to prevent aspiration. Relief is instantaneous and the symptoms subside at once. Some surgeons prefer to incise from without, but Peiper thinks that the simpler operation should be done without delay.

68. **Ultraviolet Exposures in Treatment of Bacilli Carriers.**—Hufnagel calls attention to the chemical changes which occur in tissues after ingestion of benzol when they are then exposed to the ultraviolet rays. An ultraviolet fluorescence is induced, and this may release toxic elements from their combination with the cells so that they pass into the blood stream and are eliminated in time. He cites research in this line by Behring, Tappeiner, Jesionek and others and refers to his own success in treating tuberculosis by this means. The same method, he suggests, might prove successful in treating bacilli carriers.

Medizinische Klinik, Berlin

February 20, XII, No. 8, pp. 199-226

71 *How Much Milk Does an Infant Need? (Zum Milchbedarf des Kindes und zur Aetiologie und Behandlung der Rachitis.) E. Feer.

72 Contracture of Stump After Amputation. (Ueber Stumpfcontracturen.) A. Hartwich.

73 *Comparative Tests of the Blood Pressure. (Ueber vergleichende Blutdruckbestimmung.) P. Horn.

74 Hernia of the Diaphragm. (Paroesophagea vera congenitalis? Zugleich ein Beitrag zur Genese der klinischen Symptome der Zwerchfellhernia.) J. Freud.

75 *Gastrogenous Diarrhea. S. v. Dziembowski.

76 Cure of Alveolar Pyorrhea With Undiluted Hydrogen Dioxid. (Heilung der Zahn-Pyorrhöe durch Einspritzung von reinem Wasserstoffsuperoxyd.) E. Kuhn.

71. **How Much Milk do Infants Require?**—Feer writes from Zurich that the prevailing high prices of provisions have had one good effect in that overfeeding of infants is less common. Last summer not one child with "alimentary intoxication" (*Brechdurchfall*) was brought to the children's clinic in his charge. For both young and old, the dietary has been reduced to the indispensable minimum, and this is greatly to the advantage of infants. He states that pediatrists are inclined to restrict more and more the amount of milk given bottle-fed babies. Czerny does not allow over a quart a day for children a year old of normal size, and only 800 gm. for smaller children. Feer goes even beyond this, not allowing more than 600 gm. a day by the end of the first year and much reducing this proportion after this. His experience has shown that the children thrive better on this than on the larger amounts of milk he used to order. He gives sugar almost from the first, rapidly increasing to 20 or 30 gm. a day, keeping this up till the seventh month with only from 350 to 500 gm. milk. Starch is given after the first month, increasing from 15 to 30 gm. in the form of rice or oatmeal gruel; at the sixth month he gives a little meat broth and fresh vegetables mashed very fine and soft, giving up to three or five tablespoonfuls by the end of the year. Fruit juices or crushed fruits he gives from the fourth month onward. In the second year he gives less milk and in the third only 200 gm. during the day. It is more trouble to feed an infant in this way by the teaspoon than to give it the bottle, but he is convinced that it will thrive better and be less liable to develop rachitis. With already developed rachitis, he reduces the proportion of milk still more. Wild animals and the children of savage races get no milk beyond the mother's lactation.

73. **Comparative Blood Pressure Findings.**—Horn has been comparing on 100 persons the findings in regard to the blood pressure as determined by various technics. Korotkow's auscultation method seemed to give the most reliable data. The oscillometer findings also harmonized with them in large measure. High pulse pressure was found particularly in the cases of arteriosclerosis, contracted kidney and functional neuroses. With auscultation of the brachial artery, the cessation of the flow under compression is perceived sooner than with the palpating finger, and also the return of the pulse is detected more readily. Both for the systolic and diastolic blood pressure the findings thus with Korotkow's auscultation technic seem to be more reliable. For comparison of the systolic pressure alone, Strasburger's palpation method may be preferable.

75. **Gastrogenous Diarrhea.**—Dziembowski discusses the rôle of hydrochloric acid in digestion and the reasons why lack of an adequate amount of it is liable to entail intestinal dyspepsia. He thinks there can be no doubt that the hydrochloric acid has a certain disinfecting action on the food, destroying fermentation-producing germs which otherwise set up fermentation farther along in the alimentary canal. The lack of hydrochloric acid also does away with the reflex closure of the pylorus. We know that the pylorus closes up when hydrochloric acid comes in contact with the duodenal mucosa. When this does not occur, the pylorus gapes continuously and in time atony results—conditions thus being the extreme reverse from the pylorospasm with hyperacidity, with its resulting constipation. Still another factor in the gastrogenous diarrhea is the mechanical irritation of the bowel lining from the undigested particles of food emerging

from the stomach. This mechanical irritation extends also to the musculature of the bowel wall, and it responds to this irritation with augmented peristalsis. The bowel contents are thus passed along with abnormal haste. There may be thus abdominal pain and diarrheic stool after nearly every meal, and undigested relics of food are seen in the stools. We know that pepsin acts only in an acid medium, and that albumin cannot be digested without hydrochloric acid. Even the starch grains require hydrochloric acid to release them from their albumin setting. The stools with gastrogenous diarrhea show pronounced creatorrhea and moderate steatorrhea. The latter differs from that with pancreas disease in that no fat needles or fat crystals are evident, only lumps of fats. Gastrogenous diarrhea is liable to develop with achylia from any cause, and he discusses in detail the various causes that have been observed. With derangement of the vegetative nervous system, anacidity and hyperacidity may alternate, entailing periods of diarrhea and constipation in turn.

In treatment of gastrogenous diarrhea, we must bear in mind that the bowel mucosa is probably irritated and hence food liable to aggravate the irritation must be avoided. He approves of giving aromatic and bitter substances to stimulate gastric secretion but not meat and spices until the bowel has been restored to normal by local medication. In conclusion he recalls that unsuspected syphilis may be at the bottom of the whole trouble. Many cases are on record in which treatment for syphilis soon brought about a complete cure after failure of all other measures.

Münchener medizinische Wochenschrift, Munich

February 22, LXIII, No. 8, pp. 269-304

77 Yeast-Food on the Market Not Palatable Enough to Become Popular. (Die Nährhefe als Nahrungsmittel.) P. Schrumpf.
78 Salvarsannatrium in Concentrated Solution. (Erfahrungen mit Salvarsannatrium in konzentrierter Lösung.) A. Schmitt.
79 Dry Powder Treatment of Vaginitis. (Der Ausfluss beim Weibe. Sieben Jahre vaginaler Pulverbehandlung.) M. Nassauer.
80 *Treatment of Gastro-Intestinal Affections. (Die Behandlung von Verdauungskrankheiten im Vereinslazarett.) F. A. R. Jung.
81 A Mutable Dysentery Bacterium. (Ein Bacterium dysenteriae mutabile.) G. Wagner.
82 *Dysentery Bacillus Carriers. (Ueber Bazillenträger bei Flexner-Dysenterie.) F. Verzar and O. Weszeczky.
83 Necessity for Immediately Protecting Wounds of the Dura and Brain With a Fat and Fascia Flap. (Erste chirurgische Versorgung der Kopfschüsse im Feldlazarett.) E. Kaerger.
84 Benefit From Blue-Light Treatment in Painful External After-Affections. (Weitere Erfahrungen über die Heilwirkung der Blaulichtbestrahlung bei äusseren Störungen nach Kriegsverletzungen.) K. Hasebroek.
85 Sudeck's Atrophy of Bone Tissue. (Ueber Sudeckschе Knochenatrophie.) H. Hofmann.
86 Orthopedics for the Wounded. (Kriegsorthopädie in der Heimat.) G. Hohmann, F. Lange and F. Schede; Commenced in No. 6. (Ueber die Verwendung von Stützapparaten bei Kriegsverletzten.) W. E. Smitt.
87 Folding Chair Litter. (Eine neue Verwundetentrage.) Röper.
88 Spring Frame for Superposed Litters. (Kuhl'sche Tragebänkchen und Tragegestelle.) O. Garlipp.
89 Treatment of Fractured Arm in War. (Zur Behandlung der Schussbrüche des Ober- und des Vorderarms.) F. v. Lesser.
90 Splints Better Than Plaster Casts for the Wounded. (Der Idealverband der Sanitätskompagnie.) M. Schlichtegroll.

80. **Treatment of Disease of Digestive Apparatus.**—Jung is chief of the American ambulance at Munich and he relates that many men are sent back to it from the front on account of diarrhea and bloody stools. Study of the cases classifies the trouble as a catarrhal bowel or bile duct affection, gastric or duodenal ulcer, cirrhosis of the liver or helminths. In many cases an ulcer was discovered as the catarrhal bowel trouble subsided. The stomach functioning was tested in every case, and achylia and subacidity were found in the overwhelming majority. This is directly contrary to the experiences outside of wartime. A. Schmidt has also recently called attention to this exceptional prevalence of achylia now. Jung thinks that the digestive apparatus of the men in this category had long been in a precarious condition, but with ordinary care in dieting the balance of health had been preserved. The conditions of warfare had upset this balance. Possibly, he adds, beer had aided in digestion and the lack of it now has contributed to the upset. He has two dining rooms in the hospital, one with the ordinary diet, milk or a bottle of beer and a cigar; the other dining room for "spoon food" (*Breiweich*), the meat all passed through a grinding machine, the vegetables all forced through a sieve. The men with broken jaws and all those with gastro-intestinal trouble, able to be up and about, eat in this room. By this fine division of the food, many with weak digestion are able to take care of it, even those with achylia and subacidity. By this double dining room arrangement the men live under approximately normal conditions and convalescence is accelerated.

82. **Dysentery Bacillus Carriers.**—Verzar found 13 per cent. carriers among 417 convalescents from dysentery of the Flexner type. He also traced a small epidemic to two chronic carriers who had infected first their bed-mates. Positive and negative bacteriologic findings may alternate so that three examinations at least are necessary to exclude suspicion.

Therapeutische Monatshefte, Berlin

February, XXX, No. 2, pp. 65-112

91 Suspension of Nuts in Place of Milk; Vegetable Milk. (Ueber vegetabile Milch.) C. von Noorden.
92 Operative Treatment of Refractory Bone Fistulas After Wounds in War. (Operative Behandlung hartnäckiger Knochenfisteln nach Kriegsverletzungen.) G. Axhausen. Concluded in No. 3.
93 Local Irritation From Injection of Preparations of Digitalis. I. (Die örtliche Reizwirkung der zur Injektionsbehandlung empfohlenen Digitalispräparate.) O. Loeb and S. Loewe.
94 *Clinical Pharmacology of Functional Nervous Affections. (Erfolge der klinischen Pharmakologie bei funktionellen Nervenkrankheiten.) H. Januschke.
95 Efficacy of Camphorated Oil by Subcutaneous Injection in Arresting Tendency to Hemorrhage. (Die blutstillende Wirkung des subkutan angewandten Kampferöls.) Volland.

94. **Clinical Pharmacology in Treatment of Functional Nervous Affections.**—Januschke relates that a laboratory and ward have been set aside for experimental pharmacology since 1911 at the new children's clinic at Vienna in charge of von Pirquet. In this department the data learned from experimental research are applied in practice according to a physiologic plan worked out for each case, not based on empirical routine. Januschke here gives the details of five cases of successful treatment on this basis of various functional nervous disturbances. Among them is the case of a girl of 13 with hysteric paralysis of the legs. He first tried to influence the motor centers in the brain with caffein, but found they responded only with fatigue. Then he strove to render the musculature in the legs more sensitive to the weakened nerve impulses. He set about to accomplish this by giving thiosinamin by the mouth every two hours for two weeks. This drug renders the motor nerve terminals in the skeletal muscles more sensitive to stimuli, and is thus able in animals to cure paralysis from curare or magnesium, if not too severe. By the thirteenth day the child was able to use her legs normally and has had no return of the paralysis which had persisted before for four months unmodified by all measures.

In another case a boy of 12 with an acute maniacal attack was cured by a sedative given in doses sufficient to keep the emotion centers at rest until they had a chance to recuperate. Amyl nitrite tests in another case demonstrated that some spasm of the vessels in the brain was responsible for the peculiar, frequent attacks of unconsciousness in a boy of 11. After ineffectual trials of various sedative and other drugs, the tendency was cured with calcium lactate and restriction of salt. A permanent cure was not realized until the daily dose was raised to 8 gm. of calcium lactate. The first day with this dosage he had thirty-three attacks, the second day two, and after that no more during the ten months to date. The prompt effect of the lactate was probably due in part to retention of the drug from the preceding milder course.

In the fourth case a young woman suffered from functional cramps of the stomach which rejected all food, and as a last resort gastro-enterostomy was done. The cramps and vomiting persisted, but after the gastro-enterostomy they yielded at once to atropin, which before had had no effect. After being kept for a week under the influence of atropin, the cramps disappeared and have never returned. A boy of 10 had palpitations, vertigo, nausea and syncope which Januschke ascribed to latent constipation and successfully treated with artificial Carlsbad salts in an isotonic 1.5 or 2 per cent. solu-

tion, to refrain from irritating the intestines. This isotonic laxative morning and evening has rendered him good service in over 100 cases of habitual constipation. It is based on Best's research (1913) on the behavior of isotonic solutions in the intestinal tract.

Wiener klinische Wochenschrift, Vienna

February 24, XXIX, No. 8, pp. 217-248

96 Typhus in Galicia. (Zur Frage des Flecktyphus auf dem galizischen Kriegsschauplatze.) J. Kaup.
97 Gas Phlegmons in War. W. Denk and P. v. Walzel.
98 Prognósis of Operations on Peripheral Nerves. O. Stracker.
99 Primary Suture of Bone After Fracture of Lower Jaw. (Zur primären Knochennaht bei Schussfrakturen des Unterkiefers.) B. Mayrhofer.
100 Local Serotherapy of Epidemic Cerebrospinal Meningitis. (Ueber die Behandlung der epidemischen Genickstarre mit epizerebralen und intrakameralen Seruminjektionen.) K. Lewkowicz. Commenced in No. 7.
101 Organization of Sanitary Service in War. (Aerztlich-organisatorische Eindrücke an der osterreichisch-ungarischen und an der deutschen Ostfront.) A. v. Tschermak (Prague).

March 2, No. 9, pp. 249-280

102 *Induced Fever in Treatment of Gonorrheal Complications. (Fieberbehandlung gonorrhoischer Komplikationen.) R. Müller and A. Weiss.
103 Mechanism of Action of Vaccines. (Zur Kenntnis der Wirkung der Vakzine.) F. Luithlen.
104 Wounds of Vessels and Gas Gangrene. (Gefässschuss und Gasbrand.) H. H. Heidler.
105 Paratyphoid A in Galicia. (Erkrankungen an Paratyphus A in Galizien.) E. E. Oesterlin.
106 The Austrian Red Cross Hospital at Sofia. E. Suchanek and K. Joachimsthal.
107 Trench Neuritis. (Zur Feldneuritis.) E. Stransky.
108 Wounds of the Skull. (Feldspitalärztliche Betrachtungen über Schädelverletzungen.) M. Cernic. To be concluded.

102. Induced Fever in Treatment of Gonorrheal Complications.—Müller and Weiss became convinced that the efficacy of vaccine therapy of gonorrhea depended mainly on the febrile reaction which it induced. The benefit was most apparent the more intense the febrile reaction, and the benefit was apparent as a rule before there could have been time for antibodies to have developed. These and other considerations suggested to them that similar benefit might be obtained from injection of any nonspecific alien albumin. They here report the results of treatment on this basis in forty cases; milk was used in some and sodium nucleinate in others, injected intramuscularly. The therapeutic effect fully equalled and usually surpassed that of intravenous vaccine therapy. The gonorrheal epididymitis, arthritis, prostatitis or urethritis promptly retrogressed, with prompt subsidence of pain and other disturbances. They regard the results as a brilliant therapeutic success.

Zeitschrift für Tuberkulose, Berlin

February, XXV, No. 3, pp. 161-240. Last indexed Feb. 19, p. 611

109 *Mobilization of the Lung as Principle in Treatment of Pulmonary Tuberculosis in Early Stages. (Mobilisation der Lungen als Grundlage der Tuberkulose-Behandlung.) E. Kuhn.
110 *Segregation and Institutional Treatment of Pulmonary Tuberculosis. (Die Sanatorienfrage.) M. Holmboe (Christiania).
111 Relations Between Alcoholism and Tuberculosis. II. (Geheimrat J. Orths Vortrag "Zur Frage nach den Beziehungen des Alkoholismus zur Tuberkulose.") C. Hart.

109. Mobilization of the Lung in Treatment of Pulmonary Tuberculosis in Early Stages.—Kuhn has now ten years of experience with his suction mask, a device worn over the mouth and nose which by valvular action impedes inspiration while permitting free expiration. The consequence is that the air in the air passages becomes rarefied, the muscles of chest and neck work harder, and the upper part of the chest is mobilized as under no other conditions. He says that his mask has been applied in thousands of cases, and the lungs and diaphragm thus exercised provide better conditions for recuperation and cure of tuberculous processes than any other means can offer. The blood and lymph flow more rapidly and abundantly through parts thus being exercised, while the conditions with the suction mask prevent any tugging on the tissues and ward off all tendency to hemorrhage. The lungs can be vigorously exercised in this way in cases in which the slightest physical exertion otherwise is contraindicated.

The suction mask also realizes a kind of autoinoculation therapy. The temperature is a delicate index of the action of toxins, and hence the record of the temperature is the guide as to the practicability of the suction mask in the individual case. By mobilization of the lung in this way, the blood and lymph sweep through it and wash out the bacterial products into the general circulation, thus realizing what amounts actually to a course of tuberculin treatment, with resulting production of antibodies. When the slight rise in temperature shows that toxins are being swept into the general circulation, he then gives the organism a chance for complete rest while the production of antibodies is going on. His mask thus aims to accomplish the exact reverse of the induced artificial pneumothorax, and his experience with thousands of cases has demonstrated, he reiterates, that this mobilization treatment in the early stages is the most promising of all methods of treating pulmonary tuberculosis, and that some contrivance like the suction mask seems to be the means best adapted for the purpose.

110. Segregation and Institutional Treatment of the Tuberculous.—Holmboe compares the methods that have been followed in various countries in treatment of the tuberculous. In Sweden, both the early and the advanced cases are taken into the hospitals and sanatoriums, of which there are a number, but the very earliest stages get no treatment. The disease is already too firmly installed before the patient reaches the sanatorium. In Germany the sanatoriums are destined for the curable cases exclusively, the restoration of the earning capacity being the aim sought. The question of the advanced cases has not yet been satisfactorily solved there. In Denmark a system of classification has been enforced, with three sets of institutions, the sanatoriums for the curable cases, tuberculosis hospitals for advanced or bed-ridden cases, and the special camps or other institutions for those able to work. The Denmark plan seems to be working well.

In Norway the system prevails of a few large, lavishly equipped sanatoriums for the curable cases. The latter can journey to them at quite a distance without harm. The advanced cases do not require such equipment, and the sick like to be near home, so small hospitals for the advanced cases are arranged in or near the large cities. Early cases can be admitted here too at need. When the institutions now being organized are completed, Norway will have, like Denmark, provisions for thus treating 1: 2,800 inhabitants. Experience seems to show that it costs more to run a small sanatorium in proportion than a large one. A resident, full time medical director is indispensable, Holmboe thinks, and fifty or sixty tuberculous patients are all that one physician can tend. The tuberculosis sanatorium costs more to equip and maintain than an ordinary hospital, and hence the incurable should not be allowed to monopolize the beds. In Sweden there is frequent complaint that their mixed sanatoriums are so crowded with the incurable that there is no room for the curable. Another disadvantage of the mixed sanatorium is the depressing influence of the sight of the advanced cases. The experience in Norway has shown that the small institutions for the advanced cases can be kept cheerful and homelike; there are about fifty of these tuberculosis "homes" in Norway.

Gazzetta degli Ospedali e delle Cliniche, Milan

February 27, XXXVII, No. 17, pp. 257-272

112 *Sand Tube for Isolating Typhoid Bacilli From the Stools. (Cultura in tubi di sabbia, previo arricchimento, per la ricerca del bacillo del tifo nelle feci.) C. Piazza.

March 5, No. 19, pp. 291-304

113 Obliterating Phlebitis as Complication of Mumps in Adult Male; Recovery. (La flebite obliterante come complicanza della parotite epidemica.) B. Nicola.

112. Motility Test for Typhoid Bacilli in the Stools.—Piazza has been applying the sand technic, described recently in THE JOURNAL, April 1, 1916, p. 1022, and endorses it as simple, convenient and reliable for the differential cultivation of typhoid bacilli. The U-shaped pipet is about 33 cm. long by 5 or 6 mm. in diameter. One of the arms is filled to a height of 10 cm. with very fine sand, the other arm with

bouillon tinted with neutral red which works up through the sand to the same level in both arms, and the bouillon is then inoculated with the infected solution. The more motile bacilli make their way through the sand and proliferate on the sand side of the tube. Piazza has been inoculating a series of tubes with cultures tinted with malachite green or mixed with bile or caffein. By this enrichment technic the cultures developed more rapidly, becoming unmistakable in less than twenty-four hours. The findings are particularly useful in revealing the duration of the elimination of typhoid bacilli by convalescents and also in detecting healthy carriers.

Policlinico, Rome

March 5, XXIII, No. 10, pp. 293-324

114 Foreign Bodies in the Air Passages in War. (Corpi estranei delle vie aeree in guerra.) G. Ferreri.

115 Case of Persisting Hiccup. (Un caso singolare di singhiozzo.) L. Belloli.

Grèce Médicale, Athens

1915, XVII, No. 21-22, pp. 37-40. French edition of Iatriki Proodos

116 Stab Wound of the Spleen. (Blessure de la rate.) G. Dre Kolias.

No. 23-24, pp. 41-44

117 Acute Atrophy of the Shoulder. (Cas de scapulalgie, à forme atrophique aigue. Carie sèche type Volkmann.) S. Papadopoulos.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

February 19, I, No. 8, pp. 645-732

118 *Surgical Treatment of Bronchiectasis. J. H. Zaaijer.

119 When Should One Be Revaccinated. (Wanneer is herhaling der koepokinenting aangewezen?) J. van Rooijen.

120 Course of Paralytic Dementia Under Treatment for Syphilis. (Het verloop van een geval van dementia paralytica onder antiluetische behandeling.) J. G. Drossaers.

121 The Wassermann Reaction in Case of Latent Familial Syphilis. (De beteekenis der reactie van Wassermann in een geval van latente familiaire lues.) P. A. I. J. Nuijsink.

118. **Operative Treatment of Bronchiectasis.**—Zaaijer's four patients all had long had distressing symptoms from their cavities but tubercle bacilli were never found in the copious and malodorous sputum. All but one had drumstick fingers. They had been given systematic internal treatment for nearly or more than a year but all in vain. One woman had had disturbances from this cause since childhood. All were materially benefited or clinically cured by the subperiosteal resection of from 13 to 20 cm. of four or five ribs, suturing in two tiers with a compressing pad above. One patient was thus completely cured in five weeks from a year's disturbances from profusely secreting fetid bronchiectasis. There was some persisting pain in the region for a time but this gradually wore off. Zaaijer reviews what others have written on the subject of operative treatment of bronchiectasis, and discusses what we accomplish by resection of ribs. The resulting deformity is comparatively slight, and the danger small, especially if done under local anesthesia. The pressure prevents fluttering of the chest wall. He advises subperiosteal resection first, and only if this proves inadequate, removal of the periosteum and intercostal muscles, supplementing the operative with internal measures as required. All his patients were clinically cured by the simpler procedure but return of trouble in one case of multiple bronchiectasis is now demanding the more complicated intervention.

Hospitalstidende, Copenhagen

March 1, LIX, No. 9, pp. 177-200

122 The Mechanism of Gas Exchange in the Lungs. (Om Lungeluftblandingens Homogenitet.) C. Sonne.

123 Another Case of Juvenile Deforming Osteochondritis. **H.** Bagger.

March 8, No. 10, pp. 201-218

124 *Fat Infiltration in Heart and Muscles in Diphtheria. (Fedtinfiltration i Organerne og kliniske Tilfælde ved Diphtheri.) S. T. Sørensen.

124. **Fat Infiltration in the Organs in Diphtheria.**—That fat infiltration occurs in the heart with diphtheria has long been known, but Sørensen has found it marked also in the muscles. He examined 7 cadavers with membranous croup and 39 with typical diphtheria. Death had occurred in the second week in 19, third week in 6, six or seventh in 7 and during the first week in only 2. Study of these various groups shows that the clinical disturbances on the part of the heart and respiration suggest the action of a paralyzing toxin acting by the intermediation of the nervous system. He thinks that this paralyzing influence is ample explanation of the infiltration of the organs, especially of the heart. It was more pronounced in the cases that lasted longer, the paralyzed muscle opposing no resistance to the depositing of fat. The paralyzing influences are what imprint its special features on the disease, including the fat infiltration of the muscles. The changes in the kidney, liver and other organs did not differ materially from those of other correspondingly severe infectious diseases. Fat infiltration was not apparent in the heart on necropsy of 13 scarlet fever children except in one who had succumbed to complicating pneumonia and empyema, and there were only traces in 2 others, one an adult. No fat infiltration was detected in the organs in 5 erysipelas cadavers, in 2 whooping cough and in one measles child. In another case of measles with fatal pneumonia there was considerable fat infiltration in heart and liver. In one case of Landry's paralysis, fat infiltration was pronounced in the diaphragm and intercostal muscles but there was none in the heart.

Hygiea, Stockholm

LXXVIII, No. 4, pp. 225-288

125 *Edema Idiosyncrasy to Acetyl-Salicylic Acid. (Till kännedomen om acetylsalicylsyre-idiosynkrasien.) O. af Klercker.

126 *Operative Treatment of Colitis; Four Cases. (Colitis gravis s. chron. suppurativa.) B. Carlson.

125. **Idiosyncrasy to Acetyl-Salicylic Acid.**—Af Klercker cites seventeen cases from the literature and reports three from his own practice in which the therapeutic administration of acetyl-salicylic acid was followed by edema, the lids and face swelling, the skin puffing up sometimes down as far as the chest. In some of the cases there was also a tendency to urticaria, near the swollen patches or more diffuse. In some of the cases the edema involved the mucosa of the nose and pharynx; in two cases there was edema of the larynx. The edema rapidly reached its height and subsided as a rule in twenty-four hours. The doses had ranged from 0.3 to 1 gm., and the pathologic reaction occurred always at the first dose, independent of the amount taken. Some instability of the vasomotor system is evidently responsible for the trouble, but nothing of the kind had been known in the families before. Some favoring factors were probable in certain cases, application of local heat, fear of poisoning, a preexisting infection or other cooperating cause. In fact, he is inclined to place considerable stress on the emotional factor in those with an unstable vasomotor system. In two of the other cases the drug was continued without further mishap. His patients were a boy and girl about 4 and a man of 25. The boy's eyes swelled up so they were entirely closed in half an hour after the first dose. The man had taken a 1 gm. tablet to relieve toothache, and in less than half an hour the lids and region around the eyes swelled until it looked as if a big blister had run around the right eye, and there was some urticaria on the neck. The seventeen cases tabulated were all in adults, including two physicians who published self-observed case histories.

126. **Ulcerative Colitis.**—Carlson's four patients now regard themselves as cured from their severe suppurative colitis, which had been debilitating them for months or years. The colon was opened at the sigmoid flexure in all, with supplementary appendicostomy in three. The interval since, free from symptoms, amounts to four years in two of the cases, women of 34 and 59. One man of 35 had had bloody stools or mucus pass every fifteen minutes, with tenesmus and remittent fever. He was bedridden in consequence from the repeated discharges and weakness. Complete clinical recovery followed the operation and after-treatment with saline douches, tannin, nitrate, bismuth and kaolin. He was then able to resume his ordinary occupations in apparent health and strength, although the fistula was still patent.

Ugeskrift for Læger, Copenhagen

March 2, LXXVIII, No. 9, pp. 287-328

127 Roentgenotherapy of Cancer. (Om Røntgenbehandling af ondartede Svulster.) S. Nordentoft.